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ARTICLE I.—*An Account of the Yellow Fever which prevailed at Thompson's Island, in the year* 1824. By BENJAMIN TICKNOR, M. D., U. S. N.

BEFORE entering upon an account of the endemic, I shall make a few remarks respecting the medical topography of the island.

Key-West, or Thompson's Island, is situated in north latitude about twenty-four, and west longitude about eighty-one degrees. The form of the island is long and narrow; its length, which is nearly east and west, is eight or nine miles; its breadth is from one to three. The general surface is level and low; the most elevated part, which is a ridge running along the southern and eastern shore, and which consists principally of sand and shells, thrown up by the sea, rises only about five feet above the level of high-water. A large proportion of the interior of the island is occupied by lagoons, or ponds of stagnant water, which are surrounded by marshes of a greater or less extent. The beds of some of these lagoons are lower than the surface of the surrounding ocean; hence they can never be effectually drained, a measure which has been considered practicable, and by which it has been supposed the island might be rendered healthy. The water of some of these ponds is salt; of others, it is fresh. These numerous bodies of stagnant water, and the marshes by which they are surrounded, constitute a prolific and inex-

haustible source of miasmata; for the former, containing a great quantity of dead animal and vegetable matter, and the latter being covered with a rank vegetation, there is always an abundant supply of materials to support the process of decomposition; which is extremely rapid where solar heat exerts its most powerful influence. It was not from this source alone, however, that noxious exhalations arose; for the whole surface of the island may be considered a great laboratory, in which they are generated in a more or less concentrated form; especially that part of it to which I shall soon particularly direct my remarks.

Besides the sources of atmospheric contamination which have been mentioned, there is another, which, though it has only an occasional existence, is, nevertheless, equally prolific when it does exist. This is an immense quantity of marine substances, both animal and vegetable, which are thrown upon the beach during the prevalence of a south or south-westerly wind. A mass of sub-marine production is thus accumulated, which extends several miles along the shore, and lies in some places to the depth of two or three feet. Within a few hours such a dense volume of most horribly offensive effluvia is sent up from this vast assemblage of corrupting materials, that it is scarcely possible to approach within a considerable distance of the beach.

Whether this kind of miasma is equally deleterious, as that which arises from marshes and stagnant water, is a question which I shall not stop to consider. I have sufficient reason, however, to regard it as one of the sources of the unhealthfulness of this island. Such are the general outlines of the medical topography of Thompson's Island; but that part of it on which Allenton stands, and which is occupied as a naval depot, deserves a more particular description.

Allenton is situated on the north-western, or leeward, part of the island; for although the trade-wind does not blow regularly here, yet the wind prevails more from the north-east than from any other quarter. Hence Allenton is exposed to a current of miasmata which the wind takes up and bears along as it sweeps over the island; and besides this, it is situated on a part of the island which is most abundantly supplied with materials for decomposition; so that it stands in the focus (if I may so speak) of all the poisonous effluvia generated on the island. The site of Allenton

is the lowest and most level part of the island that is not covered by water; and its surface, being composed principally of animal and vegetable substances, is constantly in a state of decomposition, and loading the atmosphere with offensive vapours. About fifty rods back from the harbour in an easterly direction, is one of those lagoons which have been mentioned, bordered with a marsh of considerable extent. Allenton occupies the narrow space lying between this lagoon and the harbour, and extends nearly half a mile along the shore. Here is transacted, not only all the business belonging to a naval depot, but also considerable mercantile and commercial business; and here, of course, most of the cases of yellow-fever occurred.

Allenton, being deprived by its situation of the grateful influence, not only of the regular trade-wind, but also of the sea-breeze which considerably tempers the heat on the eastern side of the island, suffers as much, perhaps, from a high range of temperature during the year, as any place situated within the tropics. The average grade of heat for nine months of the year, is but little less than ninety. During this period the mercury continues nearly stationary through the whole twenty-four hours, there being no land-breeze here at night, as there usually is in tropical regions, to agitate and cool the air; which remains motionless through the day, and by the direct and reflected rays of an unclouded sun, becomes heated to an almost insupportable degree. But during the remainder of the year, viz. in the months of December, January and February, the wind occasionally shifts from a southerly to a northerly direction, and as the northerly wind generally brings with it the climate of those regions through which it passes, it frequently causes a great and sudden reduction of temperature. Such sudden vicissitudes are unfriendly to the human body in all climates; but particularly so in a climate as enervating as that of Thompson's Island. Their effects are nearly the same there as we might suppose would be produced by a sudden transition from the torrid to the frigid zone.

But whatever may be the direction of the wind, or the degree of heat, the atmosphere is always loaded with humidity, insomuch that books and other articles are soon covered with a green mould, and provisions spoil in a short time.

A great quantity of rain falls here in the course of a year; but

it generally descends in heavy showers which rise suddenly, and as suddenly disperse, the sun shining forth with increased ardour. There is no good water on the island; the best, and indeed the only water fit for use, is that which falls from the clouds. When received, however, into clean reservoirs, and subjected to a cooling process, it is more free from impurities and more wholesome than spring-water usually is in low marshy situations. As showers are frequent, there is generally a sufficient supply of rain-water both for drinking and for culinary purposes.

Having now delineated the principal features in the medical topography of Thompson's Island, I shall proceed to give an account of the fatal endemic as it appeared there in 1824, and which still continues its destructive ravages.

REMOTE CAUSES.

Miasma.—From the remarks that have been made respecting the topography of the Island, it must be evident, that vegeto-animal effluvia was a principal agent in the production of the disease. It generally acted as a predisposing cause, though sometimes it appeared in the character of an exciting one; and when it did so, its force, in some instances, was so concentrated, that it seemed to paralyze the vital functions almost instantaneously, and to such a degree, that they were incapable of being re-excited by any means whatever. At Allenton, where, as has been stated, the men belonging to the public service were mostly employed, and where nearly all the cases of fever occurred, the miasmata were most concentrated and most powerful. Against a cause possessing such a subtle and active influence, no effectual resistance could be made; yet if the men could have been protected during the night, the time when, it is well known, that marsh effluvia are most active, I have no hesitation in saying, that the amount of disease and mortality would have been considerably lessened. A few remarks here, respecting the manner in which the men were lodged, will not, I conceive, be improper.

The building occupied for this purpose, is situated within a few rods of those prolific sources of miasmata which have been mentioned, namely, the pond and marsh bordering upon Allenton on the east; and its site is one of the lowest and most unhealthy,

even of this the most sunken and insalubrious part of the island. Though quite low, this building is divided into an upper and lower story, by a floor seven or eight feet from the ground. The lower story, which is destitute of a floor, was used for storing boats, cordage, &c., and also for a work-shop; in the upper one, most of the men were in the habit of taking their meals, and spending all the leisure time that was allowed them during the day, and of sleeping at night. This story, or rather loft, was open both at the sides and ends; and as the weather was extremely hot at night, as well as through the day, the men would throw themselves down, after the exhausting labours of the day, as near as possible to the open sides of their apartment; where, although they had a roof over them, they were almost as much exposed, not only to a current of miasmata, but also to the dampness of the night-air, as if they had been entirely destitute of every thing that looked like affording protection. Unmindful of the danger to which they were thus exposed, and being refreshed by the nocturnal breezes which occasionally passed over them, they soon fell asleep, and remained in this situation till morning; when, as often happened, they awoke with those shudderings, and those indescribable sensations of distress, which were the too sure harbingers of an approaching conflict with a most ungovernable disease. Of all the men who slept in this loft, and were exposed in this manner, not a single individual escaped an attack of fever.

But whatever degree of activity and virulence miasmata possessed in certain situations, their deleterious influence was never manifested far from the sources whence they originated. The shores of the island were the limits within which the visible effects of miasmata were generally circumscribed. There were several vessels lying within a little distance of Allenton where several cases of the yellow fever were occurring every day, yet very few of the men composing the crews of these vessels were attacked by the disease, and in no instance, I believe, without having spent some time on shore; where they were exposed to the action of vegeto-animal effluvia in their most concentrated state.

Though none of the men, as has been observed, who were on duty here, escaped an attack of fever, yet those who were strangers to the climate, and had just arrived in the vigour of

health from a northern latitude, being more susceptible to the action of the morbific agent which I am now considering, were much the greatest sufferers. Most of them were attacked soon after their arrival, and in them the disease presented itself in its most malignant character. And not only did all the men attached to the public service, some of whom, though from a northern latitude, had been long enough on the island to have become in some degree acclimated, feel the effects of this subtle poison, but also most of those who were residents there, and who had lived long in tropical climates. These were poor people, sixty or seventy in number, who had been induced to come to the island, with the prospect of obtaining there an easy livelihood. Some of these were blacks, in whom, as well as in all others of the same colour here, miasmata exerted a less fatal influence than in those of a different complexion.

Respecting the modus operandi of the aeriform products of vegeto-animal decomposition, I shall offer no remarks: for after what has been advanced by JOHNSON and others on this subject, I could not expect to say any thing that would influence present opinion; besides, it is rather my design to state facts, on which I believe all medical science to be founded, than to indulge in unprofitable speculations.

Intemperance.—This is a vice from which very few sailors are exempt, and those at Thompson's Island were peculiarly addicted to it; for they drank not only to gratify their appetites, and to enjoy the pleasure attendant on a state of intoxication, but also to guard themselves against an attack of fever.

Agreeably to a regulation of the naval service, every man was entitled to, and received, a daily allowance of half a pint of rum or whiskey; but this being considered insufficient to produce the desired effects, they would add as much to it as they could get either by buying or pilfering; and this was a common practice, until its evil effects became so apparent as to lead to the adoption of a regulation, that their supply of spirits should be reserved till evening, when they would drink the whole at once. The effects of this excessive potation were the more pernicious, in consequence of the exposed condition of the men during the night; for, throwing themselves down in a state of high excitement, with the perspiration streaming from every pore of the body, upon the

floor of their open loft, where they were exposed to the refreshing but dangerous influence of the damp night-air, they soon fell into a sleep which resembled an apoplectic stupor, and so remained till morning; by which time the stimulus of the evening draught had ceased to operate, and left the body in a state of languor and debility, which greatly favoured the operation of miasmata.

This habit of ingurgitating so large a quantity of intoxicating liquor, and especially a liquor so hot and fiery as that which is usually served out to sailors, proved more destructive from the whole being taken at once, and while the body was in a state of exhaustion from the labour and heat of the day, and therefore the less able to endure a high degree of stimulation.

But it is not to this excessive use of ardent spirits, that I would restrict the term intemperance; nor was it in those only who were in the daily habit of brutalizing themselves by intoxication, that inebriating liquors produced their morbid effects. It was not a certain quantity only of rum or whiskey, which, by raising a violent commotion in the system, and causing great disorder among its functions, invited an attack of the endemic, and increased its violence and fatal tendency, but any quantity, however small, of these or any other intoxicating liquors, capable of raising an unnatural excitement in the stomach, was found evidently to favour the accession of fever, and to lessen the chance of recovery. It is unnecessary, however, to multiply remarks upon the ill effects of spirituous potation: since it is universally known, that even in temperate climates, intemperance strongly predisposes the body to febrile affections; and no one can doubt, that in a climate like that of Thompson's Island, its influence must be much greater, and that it not only induced a predisposition to the endemic, but not unfrequently became its immediate exciting cause.

Atmospheric vicissitudes.—The only changes in the state of the atmosphere which could be recognized as exerting a morbid influence on the body, were, first, the diurnal reduction of its temperature from the solar heat being withdrawn; second, an occasional reduction of temperature, caused by a change in the direction of the wind.

With regard to the first, though the heat was but little abated by the sun withdrawing his rays, (the mercury being seldom more than seven or eight degrees lower during the night than at

mid-day,) yet slight as this change was, its morbid influence upon bodies exhausted by ten or twelve hours hard labour under a burning sun, was very apparent. The effects also of this change of temperature were the greater, in my opinion, from the general grade of temperature being very high; for I apprehend it is in accordance with a law of the human constitution, that the higher the atmosphere to which the body has been for some time exposed, is heated, the greater is the effect produced by a slight reduction of temperature. Thus, the change from ninety to eighty degrees produces much more sensible effects than the same change from sixty to fifty. Allured by the agreeable coolness of the night air, (for though the mercury fell but little during the night, yet this slight change, and the condensation of vapour which accompanied it, rendered the night-air cool and refreshing to the exhausted frame,) the men inconsiderately passed their night in situations admitting of the freest circulation of air, and consequently the most exposed to nocturnal damps. The consequence was, that, instead of awaking in the morning with renovated vigour, and the alacrity of health, they moved with difficulty from their resting-places, their limbs being stiff and benumbed, and complained of sickness and oppression at the stomach. This frequently proved to be the commencement of the fever in its most malignant form; and when it was not, such a degree of internal organic derangement was produced, as required but slight exciting causes to develop all the phenomena of the disease.

Respecting that alteration of temperature which was occasioned by a change in the wind from a southerly to a northerly direction, I shall only observe, that, as it rarely occurred till late in the autumn, when the yellow-fever became divested, in a considerable degree, of its malignant character, it is rather to be considered as a cause of the intermittent fever which then became prevalent, than of the disease now under consideration.

Heat.—From what has been already said, the agency of atmospheric heat as a cause of the disease, must be sufficiently evident. It is therefore unnecessary to say any thing further respecting it. It may not be amiss to observe, however, that the effects of the high temperature were rather those of a predisposing, than of an exciting or immediate cause; though, in some cases, an exposure

of a few hours to the solar rays was sufficient to produce an immediate attack of the disease.

Fatigue.—It unfortunately happened, that circumstances did not often admit of that attention being paid to the enervating influence of the climate in assigning to the men their several duties, which their situation required. Indeed, the same amount of labour was exacted from them, in a climate so debilitating that the slightest exertion was painful and fatiguing, as in one beyond the influence of a tropical sun. Hence a degree of fatigue and exhaustion was produced, which not only prepared the body for an attack of the disease, but rendered it more rapid in its course and more apt to terminate unfavourably. It is not intended that the foregoing remarks should reflect censure upon the officer under whose immediate command the island was at the time alluded to; for circumstances frequently compelled him to impose heavier tasks on the men, than he would have done if he could have followed the dictates of his own judgment and inclination.

Unwholesome Food.—It is agreeable to the observation and experience of those who have been best acquainted with tropical climates, that a diet, consisting principally of animal food, and especially of hard salted meats, is there peculiarly apt to cause gastric and hepatic derangement, and to predispose to febrile disorders of a dangerous character. This was one of the causes, which, though it could not, by any means, be considered capable of exerting any considerable agency in the production of a disease which owed its origin principally, if not altogether, to vegeto-animal effluvia, gave, notwithstanding, to the endemic of Thompson's Island, a greater degree of malignity than it would otherwise have exhibited. The food provided for the men consisted almost wholly of salted beef and pork; sea-bread of a coarse, bad quality; and of a few dry vegetables. To show that it tended to aggravate the disease, and to render recovery both slow and difficult, it will be sufficient to state the fact, that in several the scurvy manifested itself by unequivocal symptoms.

Such were the causes, to whose agency the origin and continuance of this fatal malady were principally to be attributed. There was, indeed, a considerable number of others; but they were so unsteady and contingent in their operation, and, besides, so trifling,

compared with those which have been mentioned, that they are not deserving of particular notice.

SYMPTOMS.

In describing the symptoms of the disease, I shall consider it as consisting of four periods or stages—the cold stage, or stage of torpor; the stage of re-action, or excitement; the period of remission; and, finally, the period succeeding that of remission, and terminating either in death or recovery.

First. *The cold stage, or stage of torpor.*—The first symptoms of the disease were generally rigors, more or less severe, accompanied with pain in the head, back, and limbs. The pain in the head was most commonly seated over the eyes, and attended with a dull, heavy feeling, and a sense of fulness and stricture, as if a band were bound tight around the head. Sometimes, instead of acute local pains, the patient complained of a general uneasiness, a malaise, as the French call it, which was more intolerable than the most severe pain, when confined to a particular part. Nausea and vomiting were among the earliest and most troublesome symptoms of the disease; indeed, they were sometimes present several days before the disease made its formal attack. The matter ejected appeared to consist principally of vitiated bile; sometimes exhibiting the colour, but not the other healthy properties, of that fluid; but most generally it was either pale, watery, and but slightly bitter, or greenish, frothy, and of an acid taste. The vomiting recurred at short intervals, and the quantity of matter thrown up was frequently very great. This was one of the most constant and obstinate symptoms of the disease; for scarcely a case occurred, in which it did not sooner or later appear, and, for some time at least, resist all the means that could be employed to check it. When it appeared first at an advanced period of the disease, it was generally more to be dreaded than when it came on earlier, because it was more apt to terminate in the black vomit. Cardialgia, or a distressing sense of burning in the stomach, was sometimes present during the whole of this stage of the complaint, but more commonly it did not take place till it was about to terminate, or till re-action had actually come on. Oppression and soreness in the epigastrium, were complained of from the be-

ginning in every case; and these symptoms were often accompanied with considerable præcordial distention. The tongue, during this stage, was of a pale or leaden colour, and its upper surface was covered with a viscid white or yellowish coat. The bowels were generally constipated, not only at this, but at every subsequent period of the disease, evacuations seldom taking place without the use of laxatives; and when thus procured, the appearance of the intestinal contents was always unnatural. Sometimes they resembled tar, both in colour and consistence, and not unfrequently possessed such a degree of acrimony as to cause extensive excoriation. The pulse was always in this stage exceedingly weak, small and frequent; and in many cases there was an undulating, vibratory or vermicular motion, rather than a regular pulsation. Delirium sometimes manifested itself soon after the attacks, though for the most part it did not come on till re-action had become well established. The countenance was expressive of extreme anxiety and distress, especially where the attack was severe. It would be impossible to convey an idea of this symptom in words; but whoever has seen it once, will never fail to recognize one of the most striking features of this terrible malady. Until re-action took place, the surface of the body felt cold; the skin was of a yellowish-livid colour, and bedewed with a cold, viscid sweat. Great languor and prostration were invariably attendant on this period of the disease; and so suddenly was the muscular energy paralyzed in some cases, that the patient would fall to the ground, and remain for a considerable time entirely helpless. Though there was a sense of chilliness during the whole of this stage, yet it was most considerable in the early part of it, and was then attended with occasional rigors; but it rarely happened that the rigors were severe, or of long duration.

Such were the symptoms which usually characterized what I have termed the first period of the disease; which, in several instances, constituted the whole of its course; for the shock which the system had received was sometimes so great, its energies were so paralyzed, and its vital organs so oppressed, that re-action could not take place. In these cases, the symptoms which have been detailed, continued gradually to increase, till the vital powers were exhausted, and the patient was carried off with black vomit, universal hæmorrhage, or general convulsions. It was compara-

tively rare, however, for the disease to run its course thus rapidly: in most cases, the cold stage, after continuing from one to twelve hours, terminated, and was succeeded by that of re-action, which constituted the second period of the disease.

Second. *The stage of re-action, or excitement.*—A considerable change now took place in the train of symptoms, some new ones making their appearance, while some which had been present during the preceding stage ceased, and others became greatly aggravated. The epigastrium continued still to be the principal seat of the disease. If the cardialgia and vomiting had not been present before, they never failed to come on now; and if they had, they became more distressing as the languid energies of the system revived. But, at the same time, as the blood was impelled by the increasing power of the heart to the smaller vessels, from which it had receded during the period of torpor, the patient experienced considerable relief from the epigastric oppression. A corresponding change took place in the pulse: from being small, feeble, and oppressed, it became more full, hard, and tense. Its principal characteristics, during this period, were hardness and tension; for, however violent the febrile orgasm might be, the pulse, though hard and tense, was still small and contracted. The disorder in the sensorial functions was now considerably augmented; if delirium had not come on before, it rarely failed to occur at this time; and if it had, the increased determination to the head rendered it more violent. The pain over the eyes, together with the sense of stricture, became excruciating; the face was flushed and tumid, and the eyes were red, protuberant, and watery. The tongue appeared preternaturally red and vascular, and its upper surface was covered with a dry, brownish crust, in most cases where the gastric affection was severe; but in others nothing was observable, except a moist, white, or yellowish, mucous incrustation. The renal secretion became now of a deep red or yellow colour. In some cases, the yellow suffusion of the skin and eyes made its appearance at this stage of the disease; but most frequently, as the circulation returned to the cutaneous vessels, the skin regained its natural colour, and at length became preternaturally florid. At the same time, its temperature rose considerably above the healthy grade, and the moisture with which, during the preceding stage, it had been bedewed, was now dissipated or

absorbed, and left it dry and husky. During the stage of re-action, both the local pains and the general distress were considerably augmented; to such a degree, indeed, in some cases, where the morbid sensibilities of the system were exquisitely acute, that the patient's sufferings became almost insupportable. Watchfulness was, of course, a constant attendant upon this state of misery, and, if possible, rendered it more intolerable. Thirst was also a distressing symptom, which nothing could allay; for such was the irritability of the stomach, that every liquid received into it was instantaneously rejected.

Such were the important symptoms attendant upon the second stage of the disease; which usually continued about twenty-four hours, and was then succeeded by a remission of the most urgent symptoms; though in a few instances the re-action was so violent, that the powers of the system were soon exhausted, and, instead of a remission, it was followed by immediate dissolution.

Third. *The period of remission.*—This was characterized principally by an abatement of all the local and general pains, and especially of those referable to the head and stomach; by the pulse becoming softer and fuller, and at the same time less frequent; and by a reduction of the cutaneous temperature to its natural standard. The remission was more or less complete, according to the violence of the preceding stage, and according to the early or late employment of the proper curative means. Sometimes the patient was able to leave his bed, and walk about, and complained only of debility; but most generally he continued, during this period, in a low, languid state, and equally averse both from mental and bodily exertion. In every case, however complete the remission may have been, there was still remaining some degree of gastric irritability, and of tenderness and oppression in the epigastrium; which indicated that the disease still retained some degree of dominion over the epigastric viscera. It happened, in a few instances, where the attack was not very severe, and where the proper remedies had been early and diligently employed, that the remission was so complete as to constitute a crisis, and thus the farther progress of the disease was suddenly and entirely arrested. But the general course of the disease was different; and whether the issue were finally fortunate, or otherwise, the remission com-

monly terminated in about twelve hours, and was succeeded by those symptoms which marked its fourth and last period.

Fourth. *The period succeeding that of remission, and terminating either in recovery or death.*—This stage usually commenced with the symptoms of re-action, which varied both in severity and duration, according as the system had been more or less prostrated by the previous ravages of the disease. In most cases, however, whether the event were fortunate or unfortunate, the struggles of the system were less violent than during the preceding stage of excitement. A favourable tendency was, therefore, indicated, not so much by the efforts of re-action being less violent than during the former re-active stage, as by those symptoms which gave evidence that the disease was losing its influence over those important organs, in which, as I have more than once observed, it seemed to be principally seated. Hence, when the vomiting and cardialgia were less urgent, indicating a less degree of gastric irritability; when the epigastric tenderness and oppression were less; when the cerebral pain and disorder, as well as the general distress, were more tolerable; and when the alvine discharges exhibited a more natural appearance than during the preceding orgasm, the prognosis was not only favourable, but in general the morbid phenomena quickly disappeared, and did not again return. Sometimes, however, the symptoms of re-action were renewed a second, and even a third time; but where recovery eventually took place, they became less severe at every repetition, and the intervening period of remission became more perfect and of longer duration. In the early part of the period now under consideration, the question of life or death was most commonly decided; for convalescence usually commenced with the diminished violence of the symptoms attending the second stage of re-action, or with the beginning of the fourth period; and though the febrile torch was once or twice more re-kindled in some instances, still convalescence continued to advance.

But the disease, unhappily, too often pursued a different course during the period which I am now considering. The symptoms of re-action, with which this stage usually commenced, were, indeed, frequently mild in these cases; but this was owing to a failure of the vital powers, and not to any check having been given to the progress of the disease. Though the efforts of the system were

less violent than they had been before the powers of nature were enfeebled by ineffectual struggles against the disease, yet the patient's sufferings were now considerably augmented. The gastric irritability was greater, and consequently the vomiting became more incessant, and the burning more distressing; the oppression and tenderness in the epigastrium were increased; the tongue became dry, if it had not been so before, and its coat changed from a yellowish to a dark brown; the mental disorder became more unmanageable; the countenance assumed a dark lurid appearance; the pulse was less tense and hard, but more frequent and vibrating; the anxiety and jactitation were increased; and though the debility was great, yet the patient's struggles were so violent, that it required the united force of several men to restrain them. It sometimes happened that this state, after continuing from twenty-four to thirty-six hours, or upwards, was followed by a partial remission. This remission continued but for a short time, and was succeeded by another and last effort of nature; for, if thus prolonged, the conflict soon exhausted the feeble remains of vital energy, and the symptoms which announced the immediate approach of dissolution, now made their appearance. But in much the greater number of cases that ended fatally, a second remission never occurred: the feeble efforts with which the last stage of the disease commenced, continued until disorganization took place in the stomach, or the vital functions were overpowered. The train of fatal symptoms now made their appearance. Of these the most essential were, the insensibility of the patient to his situation, as manifested by his saying that he felt very well, when he was in the greatest danger, while at the same time there was no other evidence of mental disorder; a dull, heavy, glassy eye; preternatural slowness of the pulse; coldness, and a dusky-livid hue of the skin; sudden return and voracity of the appetite; singultus; black vomit; and hæmorrhage. Yellowness of the skin and eyes, though generally present in the last fatal stage, was an unfavourable, but by no means a fatal symptom, as it also made its appearance in several cases that eventually did well. It usually appeared about the close of the third day, and was first observed as a faint tinge in the sclerotica, or on the forehead, neck, or breast. From these parts it quickly diffused itself over the whole body, and from a faint suffusion, it became a deep orange colour,

especially on the anterior part of the thorax and abdomen. Of those symptoms which have been enumerated as fatal, some were present more frequently than others. These were the uniformly livid appearance of the skin, or the yellowish-livid colour, interspersed with spots of a darker hue; singultus; black vomit; and hæmorrhage. None of these was fatal in every case, except the last, and fortunately that was of rare occurrence. Two or three recovered in whom the hickup had been almost a constant symptom for two or three days; and about the same number in whom the black vomit had commenced. This latter symptom was one of the most constant precursors of dissolution. It usually came on about the third or fourth day of the disease, and continued till life was extinguished, which commonly happened on the fourth or fifth day from the attack. A great degree of gastric irritability generally preceded it, and always indicated great danger; but in a few instances, the black vomit suddenly came on, and carried off the patient, where there had been but little disturbance of the stomach, and where, moreover, there had been no particular indication of danger. The matter thrown up was of two kinds: one was a black, glistening, flaky substance, swimming in a thin, watery fluid; the other, of which astonishing quantities were sometimes ejected, presented the well-known coffee-ground appearances. Both these kinds of matter were sometimes thrown up with but little effort; but, in general, the exertions and agony of the patient were extreme. The same kind of matter was also often discharged from the bowels. It has been observed, that hæmorrhage was inevitably a fatal symptom; but it was not every kind and degree of hæmorrhage that was so. There was sometimes a slight discharge of blood from the nose, and also from the urethra, which, when not accompanied with other symptoms which indicated danger, were by no means alarming. But the hæmorrhage to which I allude, was that which resulted from an atonic or dissolved state of the solids, and in which the blood issued from almost every aperture of the body at the same time, as the mouth, nose, urethra, anus, and also from blistered surfaces. The blood in these cases was of a dark, grumous appearance, and showed but little disposition to coagulate.

The march of the disease, from the accession of the fatal symptoms which have just been enumerated, was usually very rapid,

and the sufferings of the patient were often indescribably severe. The fatal termination generally took place on the fourth or fifth day of the disease; and, if a general conclusion may be drawn from the few examinations detailed below, was rather the consequence of disorganization of the stomach, than of a general prostration of the vital functions.

APPEARANCES AFTER DEATH.

Though the number of post-mortem examinations which time and circumstances permitted me to make was small, being only three; yet, as these, few as they were, may serve in some degree to elucidate the pathology of the disease, and the modus operandi of its causes, I shall be excused for inserting some account of the cases and of the subsequent appearances on dissection.

Case 1.—In this the disease presented itself in a character, which, in some respects, was uncommon. The patient was attacked in the usual manner, and, after remaining for several hours in a state of torpor, reaction came on; but it never rose high. The stomach continued free from irritation during the whole progress of the disease, and the patient complained of no pain or uneasiness except a slight sense of oppression in the præcordia. The pulse from first to last was soft, full, frequent, and undulating. He died on the seventh day of the disease, without either the hickup, black vomit, or hæmorrhage; and within an hour after death the body was examined.

On laying open the abdomen, the omentum was found to be so highly injected with blood, especially the omentum minus, that it resembled a red net-work spread over the intestines. Equally strong were the marks of congestion in the peritoneum lining the posterior parietes of the abdomen, and especially in the right hypochondrium and pelvis. The membrane here was considerably thickened, and of a dusky red colour. The peritoneal coat of the stomach, particularly at its upper extremity, was highly engorged with blood; and the same coat of the duodenum, between the pylorus and ductus communis, was in a similar condition. The internal surface of the stomach and intestines presented no morbid appearance. The liver was of unusual size, and its organization

was considerably changed from a state of health. When cut into, or torn asunder, its colour was found to be considerably darker than natural, nearly resembling that of venous blood; and its texture was firm and granular. These morbid appearances were most conspicuous in the posterior part of the large lobe, near the transverse fissure. The gall-bladder was not more than half its usual size, and contained a small quantity of a dark brown matter, a part of which was in a semi-fluid state, and the rest consisted of small granuli, which disappeared on being subjected to a slight degree of friction. The intestines contained a considerable quantity of this matter, which became darker the lower it descended. The spleen was enlarged, and so altered in its structure, that it resembled, both in colour and consistence, a dark, venous coagulum. The bladder was distended with urine of a deep yellow colour, notwithstanding there had been no complaint of difficulty in micturition at any period of the disease. The peritoneal covering of the bladder exhibited a high degree of inflammatory congestion; but the internal surface showed no marks of disease. All the larger venous trunks in the abdomen were distended with a black, semi-fluid blood.

Such were the morbid appearances which the abdominal viscera presented; and as there was no evidence of the disease having exerted any particular force upon other organs, the examination was not carried beyond the limits of the abdomen.

Case 2.—In this, the disease appeared at first in its most formidable character, and preserved its threatening aspect for four or five days; at the expiration of which time, a favourable change took place, and very soon the patient was evidently convalescent. During the period above mentioned, the symptoms depending on gastric irritability, were particularly urgent, especially hickup and cardialgia. Vomiting recurred less frequently than in some other cases; but it was attended with violent and exhausting efforts. The black vomit never made its appearance. On the second day of his convalescence, this patient, by imprudent exposure, brought on a relapse, which in two days terminated his existence. The symptoms during these two days were, with the exception of black vomit, the same as those which most commonly attended the last stage of the disease when it terminated fatally, and having been already described, need not be here repeated. An examina-

tion was made within three hours after death, and disclosed the following appearances.

The omentum presented the same marks of vascular turgescence as in the preceding case. On removing the stomach and intestines, a very firm adhesion was found to have taken place between the duodenum and pancreas. The stomach was the organ on which the force of the disease seemed to have been principally concentrated. Its external surface presented marks of congestion, though not in a very great degree; but the interior exhibited the ravages of disease in a most striking manner. On laying open this viscus, it was found to contain at least a pound of the matter of black vomit, a layer of which adhered closely to its inner surface. The texture of the mucous tissue was so entirely destroyed, that it resembled a layer of bloody mucus, rather than an organized membrane; and the whole could be easily scraped off with a knife. The vessels of the muscular coat were highly turgid, but its texture appeared not to have undergone any change. The greatest degree of vascularity and congestion was observed in the vicinity of the pylorus, in consequence of which the size of this orifice was considerably diminished. The inner surface of the intestines presented nearly the same appearances as that of the stomach, and they contained a large quantity of the same black matter; but here it had lost its fluidity, and acquired the consistence of an extract. In the lower part of the ileum this matter had accumulated in such quantity, as to render this part of the intestinal tube impervious. The liver was of its natural size, and no marks of internal structural derangement appeared. The gall-bladder contained about half an ounce of a substance of the consistence, and nearly of the colour, of pitch. A considerable quantity of this depraved hepatic secretion was found through the whole course of the small intestines, and mixed with the black matter already described. The parietes of the gall-bladder had acquired an unnatural thickness and density.

These were all the morbid appearances discoverable in the abdomen; which, owing to a want of time, and to the circumstances mentioned in the preceding case, was the only cavity that was examined.

Case 3.—The course of the disease in this patient so nearly resembled that which was last described, that I shall only enumerate

the symptoms in which the two cases differed. These were the black vomit and convulsions. The former came on about two days before death; but it continued only a few hours, and the quantity of matter thrown up was small. After the black vomiting ceased, he was seized with general spasms, so violent, that several men were required to keep him in bed. They recurred at short intervals, till a few hours before death, when they ceased, and he sunk into a quiet, insensible state, which continued till the lamp of life was extinguished. During the continuance of the spasms, the patient manifested an hydrophobic aversion from liquids; the least attempt to swallow a fluid of any kind, even at a moment of the most perfect tranquillity, threw the whole frame into the most violent convulsions, and produced symptoms of the most furious canine rage. As these spasms subsided, the body became suffused with a dusky-yellowish tinge, which was here and there interspersed with spots of a dark purple hue.

After death, time was not allowed for decomposition to take place, to any considerable degree, before an examination was made. The cavity of the abdomen contained a large quantity of yellowish serum, possessing such a degree of acrimony as almost to excoriate the hand. The omentum was nearly destroyed, there being only a shred of it remaining, and that was in a corroded and semi-putrid state. The stomach contained nearly a pound and a half of the same kind of black matter which had been vomited two days before; the texture of its internal coat was destroyed, so that the whole could be easily scraped off; the muscular coat was in a similar state in some places, and where the texture remained uninjured, there were marks of a great degree of vascular engorgement. The inner surface of the intestines presented the same appearances, though in a less degree, than the stomach; and they also contained a large quantity of the same kind of black matter. There was no appearance of bile, either in the intestines or ductus communis, the cause of which will soon appear. The liver was considerably increased in volume, and its texture was more firm, dense, and granular, than natural. This was particularly observable in the great lobe. The gall-bladder was transformed into a semi-transparent, yellowish, gelatinous mass, its cavity being almost wholly obliterated, and its parietes having become nearly half an inch thick. In the small cavity that re-

mained, was found a substance of a conical shape, weighing about two drams, of the consistence of cheese, and of an olive or chocolate colour. The apex of this body was lodged in the neck of the gall-bladder, and so completely filled it as to render it wholly impervious. The lining tissue of the cystic cavity was unnaturally vascular, and of a dark colour. The spleen was nearly three times its natural size; but its structure seemed to have undergone no change. The bladder contained about two pounds of straw-coloured urine, and, both on its external and internal surfaces, exhibited marks of vascular turgescence. The peritoneum lining the posterior parietes of the abdomen, was likewise in a state of congestion. Several of the mesenteric glands were a good deal enlarged.

For reasons which have been mentioned, the examination in this case, as in the others, was confined to the viscera of the abdomen; and the morbid appearances which presented themselves here, are sufficient, in my opinion, to account for all the phenomena of the disease. The conclusions deducible from the preceding examinations, respecting the pathology of the disease, and the modus operandi of its causes, are so obvious, that it would be a waste of time to attempt to present them in a clearer light. Without pretending, therefore, to interpret the language of facts, which, I believe, have been correctly stated, and which speak so intelligibly as not to be easily misunderstood, I shall proceed to detail the plan of *Treatment*.

(TO BE CONTINUED.)

ARTICLE II.—*Staphyloraphe, or Palate-Suture, successfully performed.* By A. H. STEVENS, M. D. Professor of Surgery in the College of Physicians and Surgeons, New York.

MR. THOMAS PEARSALL, aged 25 years, of Greene county, New York, applied to me in September, 1826, for advice respecting a machine he wished to have fitted for a congenital division of the palate.

The division extended from about the anterior part of the palatine bones directly backwards, in the median line, through the velum pendulum palati and uvula. The retraction of the parts

left an opening like an inverted V, with a rounded top, or, perhaps, more like the Greek letter Ω; but in the space between the palatine bones, the soft parts projected a little on each side, towards the median line.

I proposed to him an operation for uniting the divided parts, which appeared to be rather separated than wanting. He assented to this, and having, by my advice, arranged his affairs, and provided himself with a person to attend to his wants, he agreed not to speak, or swallow any thing whatsoever, for four days. I performed the operation in the following manner. The patient being seated near a window, and his head thrown back, and supported by an assistant standing behind, I interposed a handkerchief, tightly rolled up, between the molar teeth of the right side, and depressing the tongue with the left hand, introduced with the right hand a curved needle, armed with a thread, passed through an opening near its point. The head of the needle formed a small screw, and was received into a straight cylinder of iron, furnished with a female screw for the purpose. The needle was passed through the lower part of the velum pendulum, opposite the base of the uvula, and on the left side, about one-sixth of an inch from the edge. The shaft was now unscrewed, and the needle brought out. The two ends of the thread were then held back at the angle of the mouth, and two other ligatures were introduced in a similar manner, and then also on the opposite side. With a hawk's-bill forceps, I now seized the anterior part of the divided palate, and inserting a cataract knife about one line anterior to the division, pared off a thin slice of the membrane on each side. One end of each of the ligatures was next tied to one end of the corresponding ligature on the opposite side, and the knot was then drawn through, and divided. The lower ligature was then drawn with a surgeon's knot and a single knot upon it; next, the middle, and, lastly, the upper one; and the ends of each cut closely.

The operation lasted nearly one hour, time being given, in the intervals of introducing the threads, for the patient to rest, and recover from the efforts to vomit, which were occasioned by them, and also for the bleeding to cease. The patient, by request, went to bed to prevent hunger, and did not speak or swallow any thing for four days, only wetting his mouth with cold water. At the expiration of the fourth day, I removed the threads,

and found the parts perfectly united. On the morning of the fifth day, when I visited him, I found he had already taken a bowl of rye mush and milk; no separation of the parts had taken place. An astringent gargle was prescribed. In the afternoon, he ate several pies, and began to speak freely, but not with much improvement in his articulation. Supposing it might proceed from the division of the uvula, the parts of which hung like a swallow's tail from the end of the velum pendulum, I removed one of them. The inflammation soon subsided, and on the tenth day, he came to take leave, being about to return home. The parts were entirely united, and the inflammation scarcely perceptible. The voice was materially improved, but far from being perfect. He felt that the air did not go so much up into his nose as before the operation, or on the first days after it; and that the palate was not so tightly stretched across his mouth as before. Indeed, it was evidently getting further back than it was at first, in consequence of its yielding.

This young man was operated upon in presence of Dr. E. G. Ludlow, of this city, and was visited in the progress of his case by Dr. Hodge, of Philadelphia, and Dr. Kissam, of this city. I am not aware, that this operation has been attempted before in this country; the author of it is Mr. Roux, of Paris; he first peformed it upon a Mr. Stephens, a medical gentleman, of Canada. Mr. R. states, that the speech was corrected as soon as the ligatures were applied. It was not so in Mr. Pearsall's case. Mr. R. does not enter into the particular mode of tying the ligatures. Mr. Alcock, of London, has also performed the operation, but did not succeed in effecting union on the first trial, except at the lower part of the soft palate; and was obliged to repeat the operation five or six times, with threads and with needles, owing, as I conceive, to his applying a single, instead of a surgeon's knot, and to his not preventing the patient from speaking or swallowing until union had taken place. Mr. A. states, that the reason patients do not receive the perfect use of speech, immediately after the union of the parts, is, that they require to be taught to place the tongue against the roots of the front teeth, in making such sounds as *c*, soft, *s*, and *th*, and by diligent attention to attain the pronunciation of the different words. I regret that my patient left me before I could test the value of these directions. I apprehend, however,

that it is necessary the velum pendulum palati should hang somewhat loosely across the fauces, in order to close the opening of the posterior nares, in speaking. I therefore infer, that Mr. Pearsall will ultimately acquire a perfect power of enunciation.

ARTICLE III.—*On Hæmorrhages.* By D. FRANCIS CONDIE, M. D.

APPLICABLE, from its etymology, to every discharge of blood from the vessels destined to contain and circulate the latter, whatever may be its cause, or the particular part of the system in which it takes place, it must be evident, that, with this latitude of meaning, the term hæmorrhage would comprise numerous diseases, differing from each other in many important particulars.

Of the various morbid discharges of blood to which the human body is liable, some are the result of an actual læsion of the vessels from which the blood is effused, while others take place spontaneously, or without the precedence of any very manifest injury of a part to which their production can be attributed. The first of these have been divided into traumatic and symptomatic hæmorrhages; and the second, to which STAHL gave the very appropriate appellation of *active* hæmorrhages, are now very generally denominated spontaneous, or idiopathic. Traumatic hæmorrhages are, of course, such as result from an accidental wound or rupture of the blood vessels, produced, most commonly, by external violence. With respect to symptomatic hæmorrhages, they are, invariably, the result of some preceding affection, such as ulceration, cancer, gangrene, &c. It is the remaining class of spontaneous, or idiopathic hæmorrhages, to which, in the present essay, we propose exclusively to confine our remarks.

The vessels of every description, in which the blood circulates in our system, present this remarkable phenomenon, that opening upon every surface, either to receive the fluids absorbed, or to give discharge to the product of various secretions, they never allow, so long as the different organs continue in a state of perfect health, the escape of their contents, if we except, perhaps, the sanguineous discharge which takes place in the act of menstruation; but, what is not true in reference to a state of health, we

frequently find to occur, when certain morbid conditions in the vessels of a part are present, when from the same surfaces is poured out blood, which in their healthy state furnished only mucus, serum, or the fluid of perspiration; and this, as we shall attempt to prove hereafter, without any destruction of the integrity of the vessels, or any perceptible læsion, by which the production of the hæmorrhage can be explained.

These fluxes of blood, from the frequency of their occurrence, and their too often fatal character, constitute a class of diseases, the pathology of which becomes a subject of the first importance to every member of the profession. Notwithstanding, however, the interesting practical results to be anticipated from an investigation of the actual condition of the blood vessels, upon which the production of spontaneous hæmorrhages depends, yet by the physicians of our own country, as well as those of Great Britain, this subject has, for a length of time, been almost totally neglected, and, as a necessary consequence, we discover no unanimity of opinion to exist, as to the nature or causes of these diseases; on the contrary, in relation to these points, individuals of equal experience and authority, forming their conclusions from partial observation, and a few imperfectly established facts, are found to maintain, not merely discordant, but absolutely opposing doctrines. This circumstance is rendered the more surprising, when we turn our attention to the continent of Europe, and find, that, by the profession there, the principal points in relation to the class of diseases under consideration—the phenomena by which they are accompanied during the life of the patient, and the appearances left by them after death in the organs which had been their seat, have been made the subjects of the closest study, and the most patient and minute examination. In this investigation, the physicians of France have undoubtedly the precedence; and, as the result of their labours, the world has been favoured with numerous valuable treatises, in which the causes and nature of spontaneous hæmorrhages have been placed in an entirely new light, and their pathology rendered the basis of a more rational and successful practice. To the publications just referred to, as yet but little known in this country, we shall be indebted for many of the facts and arguments contained in this essay.

Of all the elementary tissues which enter into the composition

of the human system, the mucous is that in which hæmorrhages most frequently occur; and this is no doubt to be explained from the fact, that the mucous tissue, for the most part highly vascular, is more particularly exposed to the influence of irritating causes, whether exterior agents, atmospherical vicissitudes, or irritating substances, inhaled into the lungs, taken into the stomach, or otherwise introduced into the system. Let this be as it may, epistaxis, hæmoptysis, hæmatemesis, &c. are the species of hæmorrhage of by far the most frequent occurrence, all of which are produced from mucous surfaces. But, although the mucous tissue must be admitted to be the one, in which spontaneous hæmorrhages are the most frequently seated, yet other tissues are by no means exempt from their occurrence; thus, it is not rare to discover effusions of blood in the cavity of the pleura, subsequent to certain inflammations of the thorax; and the same circumstance has been observed in the pericardium, in the cavity of the peritoneum, and in the ventricles of the brain, as a consequence of inflammations affecting these parts. Bordeu and others have cited instances, also, of spontaneous hæmorrhages of the cellular tissue; and examples are not wanting, to prove that even the surface of the body may be the occasional seat of these effusions of blood.

Spontaneous hæmorrhages are by no means of the same degree of frequency at every age of life. They are, in general, more common, and the discharge of blood more abundant, towards that period when the growth of the body is upon the point of finishing, than at any other age; they occur much less frequently during manhood, and are, for the most part, rare in old persons; while, during the first periods of infancy, they have scarcely ever been observed.

The two sexes are not both, equally, exposed to their occurrence; the female, who, in the healthy condition of her system, is subject to a periodical sanguineous discharge from the uterus, is, according to the report of many writers, more exposed to every species of hæmorrhage than the male, but particularly to those which may be considered as, in some respects, of an irregular character.

Hæmorrhages from particular organs, also, are more common at certain periods of life than at others. It is a truth, well known to the physiologist, that, during the first years of man's existence,

the principal efforts of nature appear to be directed towards the head, in order to develop first the highly important organs which appertain to this portion of the body. This continued action, and permanent excitement, determine to these parts a greater flow of the circulating fluids, than in after life; and hence, hæmorrhages from the mucous membrane of the nose are of most common occurrence until towards the age of puberty; after this period, the impetus and determination of the blood are principally towards the thoracic organs; and, consequently, hæmorrhages from the throat and the lungs are most frequent during youth, and until about thirty or thirty-five years of age; after which period, "the irritability of the abdominal viscera predominating," hæmorrhages from the stomach and bowels, as well as from the bladder and uterus, are of more common occurrence.

The symptoms of the different spontaneous hæmorrhages differ, from a number of particular circumstances, from the nature of the parts in which they take place, from the effused blood finding a ready outlet from the system, or being collected in the substance of an organ, or retained in some one of the cavities, &c. It is those hæmorrhages, however, in which the blood is discharged externally, to which, on the present occasion, our attention will be more particularly directed. In most of these, the blood has to pass over a greater or less extent of surface, previously to its passage out of the body; which circumstance, together with the interference of the blood, after its escape from the vessels, with the free performance of the functions of the organ in which the hæmorrhage has taken place, should always be taken into account in appreciating the symptoms of these diseases.

Most commonly, preceding and accompanying the discharge of blood, the patient experiences at the part in which the effusion occurs, as well as in those over which the blood passes in its exit from the body, a feeling of uneasiness, which differs in degree in almost every case. There are, in general, obscure and wandering pains in the neighbourhood of the affected organ, with a sense of weight, tension, tickling, or pricking, and more or less of heat. Hæmorrhages from the lungs are, also, usually preceded by a saltish taste in the fauces, a cough, and, sometimes, a wheezing and rattling in the trachea; when from the stomach, nausea and vomiting both precede and accompany the discharge. In regard to the general

symptoms of spontaneous hæmorrhages, they may be attended with increased heat of the surface—flushed face—a full, hard, and rapid pulse, and the other phenomena of acute fever; or, occurring in relaxed or debilitated habits, all symptoms of general excitement may be absent.

In the majority of cases, the loss of blood produces a degree of weakness, particularly in the arterial and muscular systems, proportionate to the quantity discharged, to the nature and importance of the organ from which the hæmorrhage takes place, and the degree of strength possessed by the patient. When the hæmorrhage has been very copious, even syncope, convulsions, and death, have been known to be its immediate effects; but, the quantity of blood discharged not being very great, and the patient young and robust, the strength will frequently be not at all impaired; while in plethoric habits, or in cases of much local congestion, even a degree of ease, and an improved condition of the general health, have been known to result from the occurrence of a spontaneous hæmorrhage.

In many acute diseases, especially in violent fevers, hæmorrhages from various organs frequently occur, as accidental phenomena; and when they take place during the height of the paroxysm, they are most generally beneficial, being speedily followed by a marked melioration, sometimes the entire subsidence, of the principal symptoms of the case; those, however, which occur in the course of what are termed malignant fevers, are most commonly a bad symptom, and, especially if extensive, or frequently repeated, are not uncommonly the precursors of a fatal termination.

In reference to the duration of an hæmorrhage, there is nothing fixed; it may continue from a few minutes to many hours, days, or even months. One of the most remarkable points connected with the history of these diseases, is their tendency to a recurrence, either from the same, or from a different organ. This tendency is peculiar to all the varieties; the number of instances, in which a spontaneous hæmorrhage has appeared but once, in the same individual, bearing no proportion to those, in which it has been again repeated, after a longer or shorter interval. This disposition to a recurrence, may depend upon some peculiarity of constitution, or organic conformation; or upon the continuance, or

peculiar liability to a return, of the same causes by which the hæmorrhage was produced in the first instance. But it is also a fact worthy of notice, that the preceding hæmorrhage would appear to be an active cause in producing a disposition to their subsequent repetition; what confirms this, is the fact, noticed by many practitioners, that accidental or artificial discharges of blood from the system, repeated several times, after nearly equal intervals, produce an absolute necessity for their continuance; or, if neglected, and no other evacuation be established to supply their place, give rise, very generally, to spontaneous hæmorrhages, in individuals who had not previously been subject to them.

While some hæmorrhages return at irregular intervals, in many instances, they have been observed to assume a character of perfect periodicity in their recurrence. Some are reproduced after intervals of considerable length, as once or twice in the course of a year, or not more than once in two or three years; while others, particularly hæmoptysis and hæmorrhoides, may be repeated daily, and continue thus to recur for many days, or even months.

Another peculiarity of spontaneous hæmorrhages, is the tendency of the several varieties to succeed to, or replace, each other, either at different periods of life, or in a space of time extremely short. These metastases take place, occasionally, without any appreciable cause; but frequently they are the result of causes, which determine the blood from the organs primarily affected, and solicit its afflux towards those which become, subsequently, the seat of the hæmorrhage. Thus, we are assured by several of the French writers, the topical application of cold, and certain circumstances affecting the mind, have produced a sudden suppression of the hæmorrhoidal flux, which was immediately followed by the occurrence of epistaxis, or of apoplexy.

When in hæmorrhage the discharge of blood is repeated in any considerable quantity, at frequent, short intervals, it produces in the constitution a very important and perceptible change. The action of every organ becomes enfeebled, especially of those destined to loco-motion; the skin becomes pale, discoloured, semi-transparent, and not unfrequently of a greenish hue; the heat of the system is diminished; the pulsations of the arteries are weakened, and the respiration is hurried by the slightest exercise;

the blood drawn from the veins, as well as that which escapes spontaneously from the capillaries, is pale, serous, and little disposed to coagulate; and, after death, that contained in the larger vessels, presents, we are informed, similar characters, while its quantity is much less than is ordinarily found in subjects that have died from other diseases.

In regard to the remote causes of spontaneous hæmorrhages, as a general proposition, it may be laid down, that whatever is capable of augmenting the volume of the blood, or of either directly or indirectly determining it in an undue proportion to any particular part of the system, will concur to their production. The list of the circumstances, by which one or other of these effects may be induced, is of very considerable length; without entering into details, it may not be unprofitable, in this place, to run rapidly over it; for the nature of the remote causes, by which hæmorrhages are acknowledged to be produced, will have some bearing upon a point, relating to their proximate cause, hereafter to be considered. Spontaneous effusions of blood, are, very generally, referred either to the use of too great a quantity of aliment, or of too nutritive or too stimulating a quality; to indolence, or too little exercise; to the suppression, or simple diminution, of habitual evacuations; to the too great augmentation of the heat of the body, by a high degree of atmospherical temperature, remaining in very warm rooms, or other situations, too great a quantity of clothing, &c.; to the sudden application of cold, particularly when the body has been overheated by exercise or other cause; to the abuse of alcoholic liquors; to some sudden or violent emotion of the mind; to a forced march, running rapidly, particularly up a steep ascent, or indeed any violent or unusual efforts of the muscular system; to irritating substances, inhaled into the lungs, or admitted into the stomach; to violent efforts to vomit; to the action of drastic purgatives, stimulating diuretics, &c.; to blows, and other external injuries, inflicted upon the body; and, finally, to a rapid and considerable diminution in the weight of the atmospherical pressure. It is evident, that, of the foregoing, some are to be considered in the light of predisposing causes, and others of exciting; and it may be a question, whether certain of them are not equally productive of accidental, as of spontaneous hæmorrhages. Besides the above, many other circumstances do,

undoubtedly, concur, in certain cases, to the production of these diseases; but as those enumerated are fully sufficient for our present purpose, we shall here close our remarks in relation to this point, calling, however, the attention of the reader to the fact, that the majority of the causes enumerated are either *direct or indirect irritants* of some portion of the system, and that they are as frequently the cause of inflammation and fever, as of an effusion of blood. According to the report of some writers, the occurrence of spontaneous hæmorrhages would appear, occasionally, to depend upon some peculiarity of constitution, transmitted from parent to child.

Having premised these few remarks, in relation to the leading phenomena and remote causes of spontaneous fluxes of blood, we are now prepared to consider the all-important question, what is the particular morbid condition, in the vessels of a part, upon which their production immediately depends? This is a subject, it is well known, that has given rise to much speculation, and in relation to which, very different doctrines have been maintained by the founders and adherents of the various medical sects. From the writings of the ancient physicians, but little information can be expected; entirely ignorant of the physiology of the circulatory system, the latter were, of course, incapable of arriving at any clear conceptions of the morbid conditions to which it is liable; hence we find, that their theories, in regard to the proximate cause of hæmorrhages, are equally applicable, in many points, to fluids circulating in inorganic tubes, as to those under the control of vessels possessed of vital functions: for example, according to the opinions of the early Greek physicians, all morbid discharges of blood result from one or other of the five following causes: 1. From *anastomosis*, or exhalation; 2. From *rixis*, or rupture; 3. From *dieresis*, or tearing; 4. From *diapedesis*, or transudation through the pores of the vessels; and, 5. From *diabrosis*, or erosion. This doctrine was admitted as true, and taught with but little variation, until the time of Paracelsus, by whom all hæmorrhages were referred to an erosion of the vessels, produced by an acrid condition of the blood, resulting from an excess of salts.

Stahl appears to have been the first, who made any advances towards the true explanation of the nature of these diseases. He divided all hæmorrhages into two general classes. The first con-

tained those resulting from wounds, rupture, or other solutions of continuity in the blood vessels, in the production of which, the latter are entirely *passive;* the second included those which occur spontaneously, to which he gave the name of *active.* The proximate cause of these, he attributes to a tonic, or salutary, movement, which directs the blood from the centre to the circumference, which movement is produced by the operation of the laws of organization, and is subordinate to the action of the vital forces, &c.; in other words, active hæmorrhages are salutary discharges, produced by the anima medica. According to HOFFMAN, at the moment when the flux of blood takes place, the blood, compressed between the heart, which forcibly drives it forward, and the capillaries, which, from their state of spasm, refuse it entrance, procures itself a passage, by bursting the sides of the vessels, and is thus discharged, either externally, or into one of the cavities. Others, with the author of the *Elementa Medicinæ,* have ascribed hæmorrhages, invariably, to an asthenic condition of the system, to the alteration or too great fluidity of the blood, an atony, or too feeble tension of the vessels, and a relaxation of their extremities. But the most popular doctrine of the present day, the one which is maintained by the majority of English and American physicians, is, that all spontaneous effusions of blood depend upon either an *active* or a *passive* condition of the vessels from which the hæmorrhage takes place; hence, the common division, in our practical works, of hæmorrhages into active and passive. The former are defined to be, those which occur in robust or plethoric constitutions, and are accompanied with general febrile symptoms; they are supposed, invariably, to depend upon an increased impetus in the vessels concerned, by which the blood is driven with unusual force into their extremities, which it opens, either by anastomosis, or by rupture. Passive hæmorrhages, on the contrary, are such as occur in relaxed and debilitated habits, unattended with fever, and which, instead of being produced by any increased activity in the vessels, are the result of such a degree of debility, or inertia, in their extremities, that the latter are no longer capable of presenting any resistance to the free passage of the blood through them.*

* The doctrine of active and passive hæmorrhages, as laid down in the

With respect to active hæmorrhages resulting as a consequence of the rupture of one or more of the blood vessels, produced by some violent shock imparted to the heart or arterial system, whereby the blood is impelled with undue force to a particular organ, notwithstanding the supposition of their being those of most frequent occurrence is assented to by many highly respectable authorities; yet, on a more close examination of the subject, we shall find ourselves obliged to consider them as extremely rare. It is not impossible, we admit, that the exciting cause, here referred to, may occasionally give rise to an hæmorrhage; but, in the great majority of cases, we shall be forced to confess, that there must have previously existed, in the part from which the flow of blood proceeds, a certain morbid condition, upon which alone the hæmorrhage actually depends. Experience proves, that the discharge of blood is subsequently repeated, in the same individual, under very different circumstances, and without any increased impulse being imparted to the circulatory system; while, on the other hand, the same shock, which has been supposed to be so common and so fruitful a source of hæmorrhage, is found to occur every day, in hundreds of individuals, of every habit and constitution, without inducing the presumed rupture of a blood vessel. In many instances, also, in which the hæmorrhage has been attributed to this cause, the symptoms which are afterwards developed prove, that, instead of having resulted from an

text, is the one generally found in the books; by a few writers, however, it has been slightly modified; thus, by DARWIN, those hæmorrhages accompanied with general fever, are referred to a too powerful exertion of "the capillary action," by which the blood is propelled forwards "more rapidly than the veins can absorb it;" while those attended "with a weak pulse, and other symptoms of general debility," are supposed to result from "the absorbent power of the veins being diminished, or a branch of them having become paralytic." [See Zoonomia, vol. 1. sect. xxvii.] Others suppose all spontaneous hæmorrhages to depend upon "a disproportion between the force or power of the heart, and the resistance of the extreme vessels;" when the former is morbidly increased, and the latter impaired, the capillaries are either ruptured, or the blood is driven through them into the exhalants, giving rise to *active* hæmorrhages; but when "the extreme arteries are much weakened, the ordinary, or even a diminished, force of the heart may rupture them," and the effusion of blood, in this case, is what they term *passive* hæmorrhage.

accidental rupture, it was intimately connected with an incipient organic læsion of the organ in which it was seated.

Several of the older writers, and, among others, MORGAGNI, have called in question the presumed frequency of these ruptures of the vessels, in parts affected with a morbid flux of blood. If, indeed, a rupture of the blood vessels, in consequence of an undue determination of blood into them, were ever possible, should we not expect to find it, at least, a very frequent occurrence, when, in certain surgical operations, by tying the principal artery of a limb, an increased volume of blood is suddenly driven, with all the force of the circulating powers, into the collateral branches? But we ask, has such a result ever been witnessed? Again, in those cases of hæmorrhages, of extremely frequent occurrence, in which the flow of blood during life is suspended, and again recommenced, at short intervals, can we reasonably suppose, that there can take place, each time, a rupture and cicatrization of the vessels, corresponding to the discharge and its suspension? It very commonly happens, also, that the hæmorrhage commences and finishes, each time it is produced, by a discharge of mucus: now, can it be imagined, with the least degree of probability, that in these cases, the mucus, then mucus mixed with blood, and, finally, pure blood, have not been furnished by the same outlets? Or is it necessary, or rational, to suppose the mucus and the blood to be furnished, the one by the exhalants, and the other from a rupture of the vessels? But, while reasoning from the phenomena of hæmorrhages, renders the idea of their production from a rupture of the vessels extremely improbable, we shall find, that the non-existence of these ruptures is proved, beyond the possibility of a doubt, by an examination, after death, of the parts that had been concerned in the disease. The opinion of the older writers, already alluded to, as to their extreme infrequency, was based upon the result of post mortem examinations; but it is to BICHAT, and other late inquirers, that we are indebted for the most conclusive evidence upon this point. The former, in his *Anatomie Générale*,* declares, that in numerous examinations of the bodies of patients who had died during the presence of hæmorrhage, the most minute examination, even by the glass, of the membranes from which the blood

* Tome II. page 563-571.

had escaped, could not discover any erosion, rupture, or other perceptible læsion of the blood vessels. MARENDEL, who has also, subsequently to BICHAT, examined with much care the appearances presented after death, by the tissues which had been the seat of hæmorrhages, confirms fully the foregoing statement in relation to the absence of any rupture in the vessels, from which the blood had been poured out.* It being, then, satisfactorily demonstrated, that there does not exist in cases of spontaneous hæmorrhages, any rupture, or other solution of continuity, in the vessels, "there remains," observes CHOMEL,† "in the present state of our science, but one mode of explaining the effusion of blood; it can take place only through the same vessels which pour out the mucus, the serum, &c. on the surface of the different mucous, serous, and other tissues—vessels, the existence of which cannot be doubted, although we are ignorant of their structure and arrangement."‡ Spontaneous hæmorrhages should, therefore, he very plausibly concludes, be referred to morbid excretions, and be placed in our nosological tables, by the side of dropsies, mucous fluxes, &c.

It has been objected to this doctrine, that in many cases, the amount and rapidity of the hæmorrhage are such, that they can be accounted for only by supposing, that a vessel of some magnitude has been ruptured, the exhalants not being presumed capable of throwing out so considerable a quantity of blood within so short a period. This objection is rather specious than solid, and is completely overthrown by a reference to the extensive discharges of mucus, &c. which take place from the exhalant vessels, during certain states of irritation. Every practitioner is aware, that, in these cases, the quantity of fluid poured out is immense: MORGAGNI cites two instances, in one of which, more than forty pounds of a watery fluid were voided from the bowels in a single day, and in the other, sixteen pounds within twelve hours.§ The amount of discharge furnished by the exhalants in these cases,

* Essai sur l'Irritation. Paris. 1807.

† Des Hémorragies. Paris. 1820.

‡ This is, in fact, a mere repetition of the opinion which had been previously advanced by BICHAT, in his Anatomie Générale, tom. ii p. 571.

§ MORGAGNI de Sedibus et Caus. Morborum. Epis. xxxi. sec. 8. 9.

will bear a comparison with any of the examples of excessive hæmorrhage recorded by BARTHOLIN, or LUSITANUS, or even those referred to in the *Elementa Physiologiæ* of HALLER.*

Although the doctrine of active and passive hæmorrhages, as already explained, has, with some slight modifications, been the one most generally maintained and taught; yet there have not been wanting individuals in the profession, who have expressed doubts as to some of its principles, while others, more recently, have been induced wholly to reject it. Thus, BROUSSAIS, and his followers, denying that, in the production of spontaneous effusions of blood, the vessels are ever passive, refer them all to either a direct or indirect irritation of the capillaries of a part.† As a consequence of this irritation, the circulation becomes there more rapid, a greater quantity of blood flows through its vessels, while, at the same time, those which in their healthy state transmit only white fluids, become now injected with blood. From these changes result, in most cases, increased redness, heat, pain, and tumefaction, in a degree corresponding to the texture of the part in which the irritation is seated; this irritation, finally, may give rise either to an inflammation, or the vessels may be induced to relieve themselves of their congestion by an hæmorrhagic action. According to this doctrine, therefore, all spontaneous effusions of blood are active, and result from the same causes as are productive of inflammation.‡

So far as it regards those fluxes of blood, which are attended

* As we have hinted already in the text, we are not prepared to maintain, that in no instance whatever is hæmorrhage the result of an accidental rupture of the blood vessels. The late Professor WISTAR, in one of his lectures, related an instance of epistaxis, occurring in an old lady, in which, upon examination, the blood was observed to proceed, *per saltum*, from a rupture in one of the small arteries within the nostrils, and which could only be arrested by continued pressure upon the bleeding vessel. Somewhat similar cases might, probably, be cited. LATOUR, in his *Traité des Hémorragies. Orleans.* 1815. Tom. 1. page 268, &c., devotes a chapter to these "hémorragies par rupture;" but in the examples which he adduces, the effusion of blood, in almost every instance, was found to have resulted from a rupture of the veins.

† Examen des Doctrines Medicales, prop. 198, 199.

‡ Ibid. prop. 200.

with general febrile symptoms, the above explanation of the production of hæmorrhages will not be very strongly objected to, by even the partisans of the common doctrine. It was the same, very nearly, as that proposed by BICHAT, PINEL, BRECHETEAU, and others, all of whom were believers in the existence of passive hæmorrhages. In his *Anatomie Générale*, we find BICHAT referring to the many points of resemblance between the condition of parts labouring under inflammation, and such as are the seat of active discharges of blood. MARENDEL, in his very valuable treatise on irritation,* makes a similar remark; while Dr. LEFEBVRE, in his inaugural dissertation, published at Paris, in 1812, has pointed out, very forcibly, the analogy between the two diseases. The latter writer has shown, that inflammation and hæmorrhage are of most frequent occurrence in similar tissues; that their remote causes are, for the most part, the same; that in their symptoms, as well as terminations, they resemble each other in many particulars; and, finally, that the two diseases are occasionally changed, reciprocally, the one into the other. This striking analogy between inflammation and many cases, at least, of spontaneous hæmorrhage, is fully borne out, by the appearance discoverable in each upon dissection. Thus, in hæmorrhages from the mucous tissues, the morbid appearances after death are increased redness, and, in consequence of the distended state of the vessels, a slight thickening of the part from which the flux of blood has proceeded. When the hæmorrhage occurs from a serous membrane, the redness is less evident, but groups of vessels still engorged with blood, will be found upon its surface.†

The admission, however, that the above remarks are equally applicable to all spontaneous discharges of blood, will, by many, be strenuously opposed: the existence, or non-existence, of passive hæmorrhages being, therefore, a subject of no little interest

* Essai sur l'Irritation. Paris. 1807.

† MARENDEL sur l'Irritation Hémorragique. This writer, however, informs us, that all hæmorrhagic irritations do not present similar effects; while those which he has designated by the term, "*efforts hémorragiques*," exhibit no alteration in the organs in which they had been seated; nevertheless, in the parts surrounding, a distended condition of the vessels is observable, and frequently, at certain points, an increase of redness.

and importance, a somewhat minute examination of the arguments in relation to it, will be demanded.

The mere admission, that spontaneous hæmorrhages do depend upon an active condition of the vessels, might be assumed as an argument against the existence of those in which the latter are presumed to be passive; for it is not very reasonable to suppose, that precisely the same effect can be produced, by two organic conditions of a part diametrically opposite to each other: notwithstanding, however, the contradiction that this opinion would appear to imply, we should, nevertheless, be under the necessity of admitting it, were it capable of being demonstrated; but we shall be enabled, we conceive, to show, that the passive character of spontaneous hæmorrhages is, in every instance, a mere gratuitous assumption, unsupported by any direct proof.

It is almost exclusively from the absence of the *molimem hæmorrhagicum*, as it is termed, or general febrile symptoms, that the supposition of the passive nature of certain hæmorrhages has been attempted to be established; in other words, when they take place in the young, the robust, or the plethoric, and are attended with the phenomena of general excitement, they are acknowledged to be active; when they occur under opposite circumstances, it is contended, they are passive. But, as correctly remarked by Dr. Parr, "degree does not change even a species," according to the canon of the systematics; and often, in the lowest states of general debility, while the extremities are cold, the part affected is peculiarly hot, and the pulse throbs with vehemence. There is not, indeed, a greater fallacy in medical reasoning, than that of inferring the nature of a local disease, merely from the absence of certain general morbid phenomena. Facts innumerable are to be found upon the records of our profession, to prove, that local irritations of very considerable extent do not, invariably, give rise to symptoms of general excitement of equal intensity; and that in many cases, they are entirely unaccompanied by the latter. From the want of a general recognition of this important circumstance, errors of the most serious and fatal character have been committed in medical systems and practice. Judging of the strength or weakness of every portion of the body, from the nature, solely, of the general phenomena, the inflammatory character has, by many, been accorded to those diseases of the viscera, only, which are

attended by an increased colour of the skin, heat of the surface, strength of pulse, and an augmented energy of the muscular system; while to the class of *asthenia*, has been referred, every morbid condition of an internal organ, in which these exterior symptoms are absent: thus, it is well known, that certain inflammations of the abdominal viscera, of the most acute character, demanding for their cure prompt and active depletion, have, in certain systematic works of no very remote date, been set down as diseases of debility, in which all active depletion is prohibited, merely from the circumstance of their being marked by a diminution, rather than an increase, of the heat and redness of the exterior portions of the system, by considerable prostration of strength, and by a small, contracted, sometimes scarcely perceptible, pulse. To a similar source are to be attributed, nearly all of those "diseases of debility," which constitute so conspicuous a class in many of our systems of nosology.

Even those phlegmasiæ, which are, ordinarily, attended with febrile symptoms of the most decided character, have, in a number of instances, been known to arrive to a high degree of intensity, accompanied only with general symptoms so obscure, that their very existence has not been suspected, until it has been revealed upon dissection. For conclusive evidence in support of this statement, the reader is referred to the work of MORGAGNI, to the *Phlegmasies Chroniques* of BROUSSAIS, and to other writers on pathology.

From the above fact, is not the inference, we demand, perfectly just, that a similar variety in the degree of general excitement may take place, in reference to the hæmorrhagic irritation? An irritation, which, it is acknowledged, is invariably marked by an exaltation of the vitality of the part affected, less intense than that by which actual inflammation is produced.

In regard to the argument in favour of passive hæmorrhages, drawn from the weakness or exhaustion of the patient, it is certainly unnecessary, at the present day, to enter into any argument to prove, that active diseases are not confined exclusively to the young, robust, and plethoric constitution. The physician who is not aware, that local inflammations, the most rapid in their progress, may and do affect, as well subjects in a state of very considerable debility, as those under opposite circumstances, has in-

deed profited but little from his study of disease. Neither the absence, therefore, of the symptoms of general excitement, nor the debility of the patient, can be adduced as a conclusive proof of the passive character of an hæmorrhage: on the contrary, whether it occur in the strong, or the debilitated, whether it be attended, or not, by the phenomena of fever, the condition of the part affected with the effusion of blood, will be found to be always the same; the intensity of the irritation, it is true, may vary, and in consequence, the degree of the general excitement, the latter of which is, likewise, invariably subordinate to the individual sensibility. Thus, in a subject who is not already in a state of debility, the hæmorrhage will be preceded by a sense of prickling, heat, and weight, in the part; by chilliness; by a small and contracted pulse; followed quickly by a general flush of heat, and a pulse full, hard, and rebounding: while in the weak, and those possessed of but little irritability, the local phenomena will be less marked, and the general symptoms may be entirely wanting; but even in the latter case, the redness and heat of the part affected will be always increased, and the patient will experience in it some degree of weight, and other uneasiness.

Even in an individual affected with an hæmorrhage, attended by all of the phenomena of general excitement, after the loss of a certain quantity of blood, these phenomena will disappear entirely, and give place to all the ordinary symptoms of debility, and yet the discharge of blood may still continue. In these cases, on the doctrine of passive hæmorrhages, we shall be obliged to admit, that the flux of blood, at first decidedly active, has subsequently, from the diminution of the quantity of that fluid in the system, and the consequent loss of strength in the patient, assumed a passive character; and that even this may be again rendered active, by the administration of stimulants: but how can we conceive, in the present state of pathology, that there should occur, suddenly, an entire change in the organic condition of a part; that its state of irritation should give place, at once, to one of extreme atony, and vice versa; while the consequence of these two opposite conditions are still precisely the same? But we have already shown, that the local phenomena are of a similar character whether the flow of blood be, or be not, accompanied with febrile symptoms; the part which is the seat of the hæmorrhage,

continues still to possess increased heat and redness, excepting, that after the discharge of blood has continued for a certain time, the local symptoms diminish, of course, in intensity.

If it were true, that the atonic condition of any organ could induce from it a flux of blood, we should certainly expect, those parts which possess the least vitality, to be affected with hæmorrhages, more frequently than others; the contrary, however, is the fact. Again, are the shrunk and withered members of the aged, or of those labouring under palsy, the tissues of which are pale, deficient in irritability and tone—are they ever the seat of hæmorrhage? Those agents, likewise, which, in their action upon the system, are productive of a sedative effect, as cold, for example, far from inducing congestions of blood in the parts to which they are immediately applied, on the contrary, by diminishing the irritability of the latter, cause them to become pale, and prevent the blood from flowing into their vessels in any considerable quantity. A relaxed or atonic condition of a tissue, not being capable, therefore, of giving rise to an hæmorrhage from its vessels, how can it be imagined, that the debilitated capillaries, after being passively distended with blood, will allow it to flow freely from their open orifices, thus occasioning what have been termed passive hæmorrhages?

If ever hæmorrhage were the result of an atonic condition of the capillaries, allowing the blood contained in them to escape from their gaping extremities, should we not expect to find it, an almost invariable concomitant of that state of extreme prostration of the system, consequent upon long continued diseases, violent fevers, excessive evacuations, &c.? This is well known, however, not to be the case. Those effusions of blood, which constitute the symptoms of certain affections termed malignant, and supposed to be the result of debility, we shall have occasion shortly to notice.

In the mucous membranes, an hæmorrhage is frequently observed to alternate with inflammation; that is to say, the symptoms of the latter disappear as soon as the flow of blood is established, and again manifest themselves when the hæmorrhage ceases. Thus, it is by no means rare to witness the entire and prompt arrest of a violent inflammatory affection, by a copious discharge of blood, occurring spontaneously; or, on the other

hand, to see an hæmoptysis stop, at the same time that the increased cough, pain, and development of febrile symptoms, announce that the irritation in the mucous membrane of the respiratory organs, has assumed a greater degree of intensity. Now, these phenomena take place in weak subjects, as well as in the strong; in those who are affected with what are termed passive hæmorrhages, as in those who exhibit all the symptoms supposed to be peculiar to the active species: but would it not be in the highest degree absurd, to assert, that in the first of these cases, the flow of blood depended upon a passive condition of the vessels! This would be to suppose, that the same tissue can pass rapidly from a state of extreme atony to that of inflammation, and from the latter condition, immediately, to that of debility; a supposition inconsistent with every established fact in pathology.

The effects of astringents, in suppressing certain hæmorrhages, has been advanced, as a strong argument in evidence of their arising from a relaxed or atonic condition of the vessels; but, it may be asked, do not these very remedies produce similar results in the cure of certain inflammations, even during their acute stage? Every one must have witnessed the symptoms of ophthalmia, of gonorrhœa, and of other inflammatory affections, yield to the use of astringents. The fact is, that whenever the irritation is slight, these articles produce a contraction of the capillaries, and by that means prevent the consequences of congestion; but, where the irritation is more considerable, astringent remedies rarely fail to augment, instead of allaying it. The same is true, precisely, in relation to hæmorrhages; when intense, and accompanied with symptoms of general excitement, they are scarcely ever controlled, or even benefited, by astringents, properly so termed; but under opposite circumstances, these remedies will frequently, very quickly, arrest them. The effects of astringents, therefore, prove nothing in favour of the doctrine of passive hæmorrhages. But in regard to some of the astringents, as they are termed, that have been found most effectual in the cure of hæmorrhages, the acetate of lead, for example, are we well acquainted with their modus operandi, when administered internally? Are we very certain, that they act by imparting tone to the system, or by contracting the fibres of those parts presumed to be in a state of relaxation? Have they not been found useful in inflammations of a highly

acute character? And, finally, are there any of them, which have been found decidedly beneficial in what are considered to be passive hæmorrhages, that are not equally well adapted to the treatment of those acknowledged to be acute? We have a right, we conceive, to demand a satisfactory answer to the above questions, before we can admit, as conclusive, any arguments, as to the nature of a disease, drawn from the mode of action of these remedies in the cure of it. It is, however, to be recollected, that both astringents and tonics may, in certain cases, arrest hæmorrhages, by increasing the local irritation upon which they depend, and causing it to pass to the state of inflammation. This fact cannot be disputed: we have, ourselves, had frequent occasion to witness hæmorrhages, that would be esteemed passive by the supporters of that doctrine, on being promptly arrested by remedies of a tonic and astringent character, immediately followed by all the symptoms of general fever, which demanded an appropriate treatment for their removal.

Every physician is aware, that cold, which diminishes action, is a very efficient agent in the suppression of hæmorrhages, as well in the enfeebled subject, as in the strong. How is it possible, that this can be made to accord with the doctrine of passive hæmorrhages? Will it be contended, that cold arrests these by causing the atonic vessels to contract, and thus prevents the flow of blood into them? But is this the effect of cold in other cases of extreme debility? At best, it is a doctrine very nearly bordering on the absurd, to suppose, that the same remedy, employed in a similar manner, will remove morbid conditions of the same parts, of a nature directly opposite to each other.

The application of blisters upon the chest and thighs, or of sinapisms to the lower extremities, are frequently found very powerful remedies in the cure of those cases of hæmoptysis, epistaxis, menorrhagia, &c., which present all the supposed symptoms of passive hæmorrhages. This circumstance would be alone sufficient to prove, that all spontaneous effusions of blood are the result of irritation; for the remedies alluded to, could have no influence, whatever, in re-establishing its accustomed vitality to a remote part, in a state of extreme atony; it is evident, they modify only the action of such as are in a state of irritation. To this argument it may be replied, that these remedies concur

to the cure of passive hæmorrhages, by determining the circulation from the part affected, and by that means unload the relaxed vessels of their blood. Without entering into any examination of the truth of this revulsion, supposed to be produced by the application of stimulants to distant parts, we will merely remark, that, in passive hæmorrhages, it is not pretended any degree of congestion exists in the organ from which they arise, or any increase of action in its vessels; but, in the language of BICHAT,* the organic sensibility is destroyed, so that the blood is permitted simply to transude through the exhalants. Now, admitting all that can be contended for on the principle of a revulsion induced by blisters or sinapisms, the latter could never effect the cure of passive hæmorrhage, unless they had the power of entirely preventing the blood from penetrating into the affected tissue; or, in other words, of completely suspending the circulation through its vessels; for, so long as the circulation in the part continues in any degree, the blood transmitted by the arteries must find a passage through their relaxed and gaping extremities. But we may remark, that depriving the vessels of their natural stimulus, the blood, is rather a novel method of rousing them from their state of atony.

Those hæmorrhages, ecchymoses, and petechiæ, which occur in the course of certain malignant and low states of fever, have been, almost invariably, considered as instances of a passive condition of the blood vessels. SYDENHAM,† and other writers, have, however, long since maintained a contrary opinion. When they occur during the height of the exacerbation, and on their first appearance are of a bright colour, there appears to be but little difficulty in admitting, that the vessels are active in their production; a circumstance which is rendered evident, by the fact of these petechiæ appearing at that stage of the disease, when the action of the capillary system is at its greatest height, and by their becoming pale at the instant when the system is sinking into a state of death. But it is very generally contended,

* Anatomie Générale, tom. ii. page 563.

† In whatever disease they occur, he declares, "à vehementi inflammatione et sanguinis nimiâ attenuatione, unde sanguis per oscula vasorum quasi vi exigitur, semper ortum ducant."—Opera Omnia, p. 558.

that when the petechiæ, or hæmorrhages, are of a dark, livid, or black colour, and occur during the stage of collapse, they must then, evidently, result from a debilitated, or, as one writer expresses it, "paralytic," condition of the extreme vessels.* In our reasoning upon this point, it must be recollected, that these dark hæmorrhages are of most frequent occurrence in fevers connected with serious affection of the brain, or in those attended with extensive congestion of the great venous trunks, and right side of the heart, and in which the blood discharged by the hæmorrhage, as well as that drawn from the arm, is in a dissolved, or uncoagulable state. Now, it is perfectly unfair to draw any inference in proof of the nature of ordinary hæmorrhages, from fluxes of blood appearing under the above peculiar circumstances, there being a very great dissimilarity between the morbid condition of the system in the two cases. Nevertheless, we see no reason whatever, why we should not refer even these hæmorrhages to a *morbid action* of the capillaries; and it remains with those who have so long contended for the doctrine, to prove that they are produced by a passive or inert condition of the vessels, the result of extreme debility. That in the latter stage of the fevers referred to, the capillaries do not labour under such a degree of debility as to render them incapable of being the seat of morbid action, is evidenced by the circumstance of inflammation and its consequences, frequently occurring, on different parts of the surface, at this very period; even in the most decided cases of congestive fever, the closing scene of life is not unusually marked by all the symptoms of general excitement, by "a glow of heat over the whole body, a dark, flushed face, an accelerated pulse, and partial or general perspiration." Every practitioner, also, who has seen much of the fevers in which the hæmorrhages under consideration most frequently appear, and has reasoned upon what he has seen, must acknowledge, that, so far from remedies adapted to rouse the vessels from their supposed state of debility, being those best adapted to prevent the occurrence of these effusions of blood, they are, on the contrary, the very means, in most in-

* See Milman's Inquiry into the Nature, &c. of Scurvy and Putrid Fevers, 1783; and Currie's General View, &c.

stances, by which they are the most certainly induced.* If, indeed, the occurrence of petechiæ and hæmorrhages, in the advanced stage of malignant fevers, were the result of the debility merely, in which every portion of the system is supposed to be involved, why do they not attend, also, the advanced stage of every violent, or long continued disease, a period when the degree of debility can scarcely be exceeded?

Discharges of blood, occurring under those general circumstances which are supposed to be diagnostic of passive hæmorrhages, characterize that peculiar affection, denominated *purpura hæmorrhagica*. In this disease, we are informed by Dr. BATEMAN, who made it the subject of his inaugural dissertation, that the cuticle is frequently raised into a species of vesicles, filled with black blood, which break from the slightest force, and give escape to their contents; the gentlest pressure upon the skin, even in feeling the pulse, will often produce a purple blotch like that remaining after a severe bruise; profuse hæmorrhages, likewise, take place from the ears, nose, fauces, stomach, bowels, &c. The disease is always attended with extreme debility, depression of spirits, and a pulse commonly weak, and sometimes quickened; it makes its appearance, frequently, during convalescency from bilious and other fevers.†

If it were possible to adduce an example of passive hæmorrhage, judging from the general phenomena, we should certainly expect to meet with it in the case before us; but, so far from the effusions of blood in purpura hæmorrhagica being the result of mere debility, or an atonic, paralyzed, or relaxed state of the capillary system, the remedies most successful in their treatment are found to be evacuants; free and repeated purging, and local or

* In the production of the dark-coloured petechiæ and hæmorrhages, which attend the latter stage of malignant fevers, it is supposed, by many, that the venous system is chiefly concerned. By DARWIN, they are referred to a diminution, or entire suspension, of the action of the extreme veins; in consequence of which, the blood brought by the arterial capillaries, in place of being taken up by the former, accumulates in a part, causing its vessels to swell, and, finally, burst. A late writer, Dr. POTTER, supposes them to result from an inflamed, congested, or irritable state of the minute veins.

† BATEMAN, p. 110.—Med. Recorder for July, 1826. p. 216.

general blood-letting; while wine, bark, and other tonics and stimulants, are not only inefficacious, but decidedly prejudicial.*

Another proof of the existence of passive hæmorrhages, is attempted to be drawn from the petechiæ and discharges of blood in scurvy. This argument is the last and desperate resort of the partizans of this doctrine. With the pathology of scurvy, we are as yet but little acquainted; weakness of the muscular system we must acknowledge to be one of its principal characters; but mere debility of the system will not produce it, neither will tonics cure it: we are, indeed, every day presented with instances of extreme exhaustion, from a variety of causes, but without the occurrence of scurvy. As far as we can judge from its symptoms and course, there exists, in the latter affection, a morbid alteration in the composition of the blood, a vitiation of all the fluids of the body, and, consequently, a diseased state of the nutritive process throughout the system. If then the blood and other fluids no longer possess the same properties as in health, if the very structure of the tissues be changed, the action of the capillaries, it is contended, must be changed also; hence, from the effusions of blood which take place under such circumstances, nothing can be concluded in favour of the passive character of ordinary hæmorrhages; neither are we permitted to infer, that the condition of the vessels, upon which even these effusions of blood depend, is that of simple atony; for we have already shown, that in no one of the other circumstances under which hæmorrhages take place, are they ever the result of debility. It has been very properly remarked by a late writer,† that persons affected with scurvy are not exempted from the occurrence of inflammations; for in that variety of the disease denominated *scorbutus calidus*, which is attended with increase of thirst, heat of the skin, and a frequent pulse, the scurvy is complicated with local phlegmasiæ; and hence, it is reasonable to suppose, that they may be affected also with that degree of irritation upon which hæmorrhage depends: but in ordinary cases, the effusions of blood in this disease "are, it is presumed, the result of the vitiation of the blood and of the nutritive

* Bateman.—Ed. Med. & Surg. Journal, Jan. 1809, and Ap. 1813.—Med. Record. July, 1826.

† Broussais Examen des Doctrines, &c. prop. 214.

process; effusions which take place in the substance of the tissues, rather than from the surface of the mucous membranes."

According to the doctrine of Broussais, scorbutic hæmorrhages may be of two species, "the one similar to acute hæmorrhages in general, from irritation of the sanguineous capillaries; the other from their disorganization, the result of defective nutrition. The ecchymoses, as they generally appear, depend probably upon the obstruction to the progress of the blood in the veins."

From a review of the foregoing arguments, and there are many more which might be adduced, it will be found, that the opinion so long maintained, of certain spontaneous hæmorrhages being the product of a relaxed or exhausted condition of the extreme blood vessels, is totally devoid of direct evidence; and that, under all circumstances, the occurrence of passive hæmorrhages is in the highest degree improbable. Many of the arguments made use of, as has been already stated, are not original with ourselves; they are all, however, of a nature demanding the serious and candid examination of the profession, and they are now brought forward, that they may be either overthrown or confirmed.

Article IV.—*The Effects of Atmospheric Air on Exposed Cavities.*

By Jno. Knox Finley, of Chillicothe, Ohio.

As the whole system is liable to frequent accidents, by which internal parts, particularly circumscribed cavities, are often exposed to the air, which in a natural state is not in contact with them, it is very desirable that its effects on these cavities in a state of health should be accurately known. The accomplishment of this object has been my aim in the following essay, in which I have endeavoured carefully "to feel after truth;" and in doing this, have confined myself almost entirely to experiments, together with a few well attested facts, taken from authors of the present day. The result of my observations I now submit to the medical public.

That the air which is so universally present, so pleasantly refreshing to all our senses, and which in a natural state has free access to the very delicate and sensible tissues of several of our

organs, should be possessed of stimulating or noxious properties, would strike us at first view as very improbable, and as being totally inconsistent with the general economy of nature. Yet, on this subject a contrariety of opinion prevails; for, while many of the most eminent of the profession consider it perfectly bland and innocent, others, and some of them of the highest authority, maintain that it is highly stimulating, and attribute to its access many of the evil consequences which sometimes result from the opening of serous cavities. These latter appear to have formed their opinion from the phenomena, frequently resulting from the exposure of diseased surfaces; and from the fact, that the free opening of healthy serous cavities is frequently attended with severe local symptoms, and with much constitutional derangement. Of the first, it is not my intention, at present, to say any thing, as my observations on the subject, in its pathological connexions, have been very limited. With regard to the second, it must be admitted, that it is frequently the case; but that it is not owing to the effects of the air, can, I think, be satisfactorily proved; and if this can be shown, it will go far to invalidate the supposition, that it is injurious to the surfaces of diseased cavities.

The serous membranes are very apt to take on inflammatory action from any injury; and when inflamed in one point, the inflammation generally spreads throughout its whole extent, by "continuous sympathy." That this is much more liable to happen in injuries of the serous tissue, than in those of any other, is a fact admitted by all pathologists, and should be borne in mind in the prosecution of this subject.

If the air be really so stimulating as it is supposed to be by many, we might expect to see inflammation, resulting from the exposure to its action, of any part of the body with which it is not naturally in contact; for almost all parts of the system are susceptible of the impression of stimulating substances, although, perhaps, not so readily affected by them as the serous tissue. That this is not the case, however, has been proved by direct experiments. Large quantities of air have been thrown into the cellular structure, immediately under the skin, and retained there until absorbed, without producing any symptoms of inflammation. Sir Astley Cooper, in his lectures by Jones, page 44, mentions, that "a trochar was passed through the skin of a dog, and the

cellular membrane was inflated, yet no appearances of inflammation followed." This I repeated on the cellular substance of a kitten, forcing into it, by means of a gum-elastic bag, attached to a silver tube, a large quantity of dry air. The distention was so great as almost to prevent locomotion for a short time; but the air gradually diffused itself through every part of the cellular structure, and in four or five days was entirely absorbed, without producing any other inconvenience. This has been repeatedly tried on different animals, and always with the same results. Every case of emphysema goes, also, to confirm the truth of this position; for it is well known, that the air in such instances never does harm, except mechanically, from excess in quantity. It being shown, then, that the air is not stimulating in these situations, we should, from analogy, say that it was innocent when brought into contact with serous surfaces. We are, however, not destitute of facts to prove the point.

Dr. Dorsey, in his Elements of Surgery, vol. i. page 71, on Wounds of the Thorax, has the following observations: "The great anxiety which has been shown to evacuate the air, originated in an opinion, that the air of the atmosphere is a violent irritant, capable of exciting great inflammation, an opinion not at all founded in truth. In the year 1790, Dr. Physick injected air into one side of the thorax of a kitten, through a small puncture between the ribs. The wound healed by the first intention, and appeared to occasion very little inconvenience to the animal. On the fourth day, the kitten was killed, and not a vestige of inflammation was observable. Many cases have occurred in the human subject, in which the cavity of the pleura has been filled with air, in consequence of a wound, and the wound being speedily healed, no inflammation has resulted. I once saw an officer who had been wounded with a dirk; the air entered and passed out of the wound during respiration. This wound united by the first intention, and in a week he was completely well, not having experienced a single symptom of thoracic inflammation."

The experiment of Dr. Physick, I repeated in a very satisfactory manner; and lest there should be any doubt about the air having really entered the cavity of the pleura, I shall detail minutely the mode in which the experiment was conducted. I would also remark here, that in this and the following experiments, I

was assisted by my friend, Mr. WESSELS, who also observed with me the results.

A kitten, the subject of the experiment, being properly secured, a small incision was made through the skin, over the ribs; I then forced the end of the tube already mentioned, obliquely through the intercostal muscles, (the end of the tube was very small, and filed to a sharp point,) in such a manner as not to wound the lungs, and, at the same time, to form a valvular opening. Then, by means of the gum-elastic bag, attached to the other end of the tube, half an ounce measure of *dry* air was thrown in. The incision through the skin was then closed with adhesive plaster; the puncture through the muscles, being very small and valvular, prevented entirely the escape of any of the air into the cellular structure. The wound healed by the first intention; and on the fourth day the kitten was killed, by passing a scalpel between the first and second cervical vertebræ, and dividing the spinal marrow; very little blood was lost. The thorax was then examined, and I easily discovered the *cicatrix* of the puncture on the internal surface of the pleura; but neither about it, nor in any part of this cavity of the thorax, could the least traces of inflammation be discovered. We examined, at the same time, the inner surface of the opposite sac of the pleura, and also of the abdominal cavity, and found them all exactly of the same appearance, uniformly white. The heart continued to pulsate irregularly during the examination.

A similar experiment was performed, by injecting half an ounce of dry air into each cavity of the thorax of a half grown kitten, at the same time. Three days afterwards, it was killed by a blow on the head, and an examination made. Both sides were found perfectly healthy; in no part of either of them could the least signs of inflammation, or any unnatural appearance whatever, be perceived.

I also experimented on the abdomen of a cat, by cutting through the skin, just behind the umbilicus, and forcing the end of the tube through the linea alba. In this instance, an ounce and a half of air was thrown into the peritoneum. The animal seemed to suffer no inconvenience from it, and no appearances of inflammation resulted.

I find very few facts mentioned by those authors who advocate

the innocuous nature of the air. They generally refer to tympanitis and emphysema, in support of their opinions. But I think, the above experiments, some of which have been repeated frequently, show very satisfactorily, that the air is not possessed of any stimulating properties.

Dr. Bond, of this city, has written a paper slightly connected with this subject,* in which he contends, that the air is injurious, not from any stimulating or noxious quality of the air itself, but from its *conducting powers:* "its power to abstract, or conduct off, heat and moisture." No one, we presume, will deny, that the air is possessed of this power under some circumstances. But in such cases, the irritation is, most probably, produced mechanically by the hard, dry scale, formed on the surface; for if the exposed part be not otherwise irritated, and be of small extent, so as to admit of its being kept in a quiet state, no injury will result from the exposure: should, however, the sensibility of the part be morbidly increased, as in the case of burns and scalds, even this slight irritation will be productive of much injury.

Irritation may also be produced by the "concentration of the acrid principles of the moisture," as Dr. Bond has observed; but surely there is nothing in this to show, that the air itself is irritating.

Even these results of free exposure cannot, however, be urged against the innocence of the air, in most of those injuries of serous cavities, in which it is supposed to exert so pernicious an influence; because, in many instances, the opening into them is too small, even if kept constantly dilated, to produce this drying effect. Nor can we, under these circumstances, attribute much to the abstraction of caloric, when we reflect, that the air is a very bad conductor of caloric, much worse than any animal fluid or solid; and, when confined in a living cavity, cannot have much influence, either in drying up moisture, or in conveying away heat: and yet, the symptoms are as severe when inflammation does supervene, as where the opening is greater.

Professor Thompson, who is an advocate for the stimulating nature of the air, attributes this effect to the oxygen which enters into its composition.† To ascertain whether oxygen alone was capa-

* Vide Phil. Med. Journ. vol. 2. † Vide his work on Inflammation.

ble of exciting inflammation in serous cavities, I repeated some of the former experiments with this gas, and will here give the results.

The oxygen which I used, was obtained from the decomposition of nitrate of potash. To ascertain its purity, I tried it with an ignited iron wire, which was rapidly consumed with a brilliant white heat. With the same apparatus used in the former experiments, I threw into the right side of the thorax of a kitten, three weeks old, half an ounce of this gas. On the third day, the kitten was killed, and an examination of the thorax made. Neither the pleura, nor any of its contents, exhibited any unhealthy appearances. The experiment was also repeated on the peritoneum of another kitten, and on the cellular structure of a third, with the same results. I would also remark, that, in neither of these cases, did the animal give any evidence of suffering.

I made the same trials also with nitrogen, and with similar results.

The greatest danger from the atmospheric air, is apprehended in injuries of the joints; but on this subject I have not been able to experiment, as I wished to have done. The joints of those animals which I could obtain, were so very small, and so accurately fitted, and their capsular ligaments were so unyielding, as entirely to prevent me from getting any air, or, at least, any perceptible quantity of it, into them. But having shown, as I think, satisfactorily, that neither the air, nor any one of its component principles, is stimulating to similar membranes in other situations, I will be content to refer to a few cases on record, of injuries of the joints, which, I think, will bear me out in the opinion already formed.

The first which I shall notice, is mentioned by Dr. Bond, in the paper already quoted. Page 173 of the Journal.

"The patella was cut across transversely, by a blow from an axe, and divided into two nearly equal portions, so that the joint was laid open, and I had a direct view into it. The patient was a healthy boy, eight years old; and the fragments of the bone united without any apparent affection of the synovial membrane."

The next case which I shall make use of, is the third case mentioned by Hey, on Injuries of the Joints. A wound, two inches in length, was made by the fall of a woodman's bill, dividing

transversely the tendon of the rectus femoris, close to the patella. A wound was made through the capsular ligament, so large as easily to admit the finger into the joint. Mr. Hey says, "After examining the interior of the joint with my finger, that no extraneous substance might be left there, I united the lips of the wound with three stitches of the interrupted suture, taking care to lay hold of nothing with the needle, but the integuments. I could not remove the blood from the inside of the joint, for that continued to flow so long as my finger remained in the wound. Neither could I favour the discharge of the blood which remained in the joint, by any method of placing the limb which would answer my principal intention." The knee was kept steady, and the parts relaxed, by placing it in a fracture box, and a perfect cure obtained, without any unfavourable symptoms.

These two cases will, I think, suffice. In both instances, there were large openings into the joints, which must have been exposed for many minutes, to the free access of the air, and that, too, under very unfavourable circumstances; one being complicated with complete division of the patella, and the other, with effusion of blood into the cavity of the joint; thereby rendering the danger of inflammation much greater than it otherwise would have been; and, no doubt, in closing the wounds, at least in the first case, a portion of air remained in the cavity; and yet we see no bad symptoms supervened.

These, with many other cases, which might be mentioned, if necessary, are certainly enough to show, that the bad consequences, which so frequently follow injuries of these parts, do not depend on any agency of the air.

To what, then, it may be asked, are we to attribute the inflammation which certainly does most generally attend injuries of the serous membranes, and particularly those of the joints? I think it may safely be answered, that, in all instances, it depends on the nature of the wound, on the state of the constitution, or on imprudent management of the injured part. If the wound be of such a nature as to prevent union by the first intention, as, for instance, lacerated or contused, we shall have, most probably, violent inflammation throughout the whole cavity; or, if it be a simple wound, whether air be admitted, or not, and improper exertion be made with the joint, the same thing will frequently happen. This is a

well known fact, and requires no reference to cases to establish it; and certainly no one can reasonably impute it to the effect of the air.

The true explanation, then, of the occasional violence of the symptoms, from what we have said, follows almost of course; that, from the nature of the wound, from undue irritation of a wound, which would otherwise have healed kindly, or from constitutional irritability, inflammation comes on in the immediate part wounded; and by continuous sympathy, to which, as we have already mentioned, serous tissues, when injured, are particularly liable, it spreads, until the whole surface of the cavity is involved.

With all the facts here collected, I do think, that "it remains to be proved, that this fluid, (the air,) which seems so bland and pleasant to our senses, and to the outward surface, is yet a horrible stimulus, when admitted, as a celebrated author expresses it, into the deep recesses of the body;" or, rather, I think it is proved not to be stimulant to those parts.

ARTICLE V.—*Remarks upon the Mischievous Effects on Society of Spirituous Liquors, and the Means of Preventing them.* By SAMUEL EMLEN, M. D. one of the Physicians of the Pennsylvania Hospital, &c.

SOME of the readers of this Journal will, probably, object to the introduction of an article, which may seem to them not strictly connected with the practice of medicine or surgery; but we hope most of our medical brethren consider every subject, connected with the cause of humanity, as intimately associated with the science which it is the object of our labours to advance. Physicians, more than any other members of the community, are constantly mixing with all classes of people, and thus become more fully acquainted than others, with the causes of human suffering. Nor have they been unmindful of their duty, both as guardians of the public health, and as good citizens, to point them out, and urge the adoption of such measures, as would lessen or remove them. They have not considered it their province, merely to visit the

bed-side of the sick, but, also, to labour in the wide field of general philanthropy.

Amongst other evils, which medical men have often held up to view, as calling loudly for some remedy, is the disastrous and desolating effects on society of ardent spirits. Statesmen and philanthropists have been well aware of their magnitude, and have long been suggesting and trying means to lessen the mischief which they have seen them every where produce; but still, *intemperance* is the predominant vice of our country. Ever since we commenced the practice of medicine, having been most of the time connected with public institutions, which made it necessary to have constant intercourse with the poor, nothing has so much arrested our attention as this prevailing vice; nothing, within the whole extent of our vision, has appeared so much to demand the attention of every well-wisher of the human race, and the solemn deliberation of our legislative bodies. None see to the same extent that medical men do, the evils which the drinking of distilled spirits inflicts: they see sacrificed to it, thousands of lives, where others are not aware of the cause; where neither neighbours, nor friends, nay, sometimes, when even the lamented victims themselves, did not suspect it. What a frightful item would be exhibited to the public, in our bills of mortality, did they fully disclose the whole number of deaths from intemperance! It is well known to numbers of the medical profession, why this cannot be done. We have long been convinced, however, that if a private record were kept by every practitioner throughout our country, or, at least, in all our large cities, of the number of deaths actually induced by ardent spirits in one year, and published to the world, it would be a more powerful means of awakening the serious attention of every reflecting member of the community to this great evil. We must all agree, that some efficient remedy for this vice is loudly called for, and should be applied; and that it is incumbent upon medical men, to lend all the assistance in their power to effect so righteous an object; mixing, as they do, continually with all classes of society, and seeing a much greater amount of human misery and distress, arising from this source, they are placed, we conceive, under additional obligations to urge its alleviation. We have long thought they might do much more than they have done; and that the influence of the profession, exerted as it ought

to be on this subject, would be widely and happily felt. Vices or habits, deeply rooted, are not to be removed in any other way than gradually; and we can see no other way, by which the crime of intemperance can be suppressed, than by a patient and persevering attention, on the part of the advocates of virtue, to hold it continually up to view, in all its enormity, till it shall not only be seen, but felt. It has been in this way, that many prevailing abuses, and long practised injustice, have been made to yield. The calls of reason, of humanity, were heard at first but from few; but, to the honour of the best feelings of our nature, they have, nevertheless, been at last listened to, and obeyed.

If it be asked, then, what remedy we are to look to, ultimately, for the removal of this great plague, and which we should press upon the attention of the country, we answer, we have not been able to anticipate any, which would be likely to prove really efficient, but the *prohibition entirely of the distillation of spirituous liquors at home, and their introduction from abroad.* Many conflicting interests stand opposed to such a measure, but we cannot view them as insurmountable. We might, indeed, ask, would the removal of this great scourge be too dearly bought at any pecuniary sacrifice in the revenue of our country, or by the whole mass of our population concerned in the profitable traffic which the distillation and consumption of ardent spirits afford? We believe not. But, most assuredly, the whole country would be a gainer, by relinquishing the traffic altogether; not merely in wealth, but in the preservation and happiness of millions of its inhabitants. We cannot really see any greater obstacles in the way of the prohibition we propose, than were to be met with in accomplishing the great work of the abolition of the slave trade, and releasing from bondage many thousands of Africans, who were mixed through the population of most of these states, and closely allied to their pecuniary interests. There was a time, and not very remote, when scarcely a voice was heard to advocate the African's cause, and point out the cruelty and injustice of trading in human flesh. Now, all civilized and christian nations conspire to declare it piracy.

Let us for a moment imagine, that ardent spirits, under whose tyranny so many thousands are also held in bondage, has been removed; that the strong arm of the law has controlled this great destroyer of lives and morals; how does the heart glow at the

prospect, in casting the eyes over the happy reformation! But it may, perhaps, be said, spirituous liquors are for some purposes indispensable; (we know them not.) On some occasions, would not life be endangered by such a deprivation? We would reply, better that human life should, in a few instances, be sacrificed to the want of it, than suffer the infinitely greater sacrifice of lives from the use of it, and the multitude of other ills it inflicts on society. But even in those forms of disease, when wine, or other fermented liquors, are not to be relied on as sufficient to keep up the desired excitement of the system, which, we are sure, most, if not all, practitioners, will agree with us they are, almost without exception; there are yet other powerful and diffusible stimulants to resort to, as substitutes for distilled spirits. As a common drink, the whole body of the profession will undoubtedly unite with HALLER, in declaring, that "distilled spirits should rather be considered a poison, than a *beverage*." We should not admit of the popular reasoning, as applicable here, "that the abuse of a thing is no argument against its use," all use of it being an abuse of it. It is mischievous under all circumstances; because, however moderately it may be used, it leads inevitably, in almost every instance, if continued, to excess, and certain destruction of life. Every victim of intemperance, at one time, thinks himself safe, and has no fear of consequences; when felt, alas! he is then a sure captive, an abject slave.

The opinion, which has obtained almost universally amongst the labouring classes, that spirituous liquors are necessary to enable them to undergo the bodily fatigue to which they are subjected, is a dangerous and fatal error. Notwithstanding it is allowed by the orders of government to the navy and military, and by great numbers who have labourers in their employ, it is, nevertheless, our duty to declare to the world, what we know to be the truth, that spirits, so far from being useful, are decidedly prejudicial to the labourer in all situations, both in hot and in cold climates. It is encouraging, by authority, a dangerous and sensual indulgence, which brings on all the evils of confirmed habits of intemperance, and an early death. "I have known many instances," says Dr. RUSH, "of persons, who have followed the most laborious employments for many years, in the open air, and in warm and cold weather, who never drank any thing but water, and enjoyed

uninterrupted good health."* Dr. MOSELEY, who resided in the West Indies, uses this language in relation to the practice of drinking spirits in hot latitudes: "I aver, from my own knowledge and custom, as well as from the custom and observations of many other people, that those who drink nothing but water, or make it their principal drink, are but little affected by the climate, and can undergo the greatest fatigue without inconvenience, and not so subject to dangerous or troublesome diseases." Dr. BELL, also, states, that "rum, whether used habitually, *moderately*, or in excessive quantities, in the West Indies, always diminishes the strength of the body, and renders men more susceptible of disease, and unfit for any service in which vigour or activity is required."

Did our aborigines feel the want of any such a draught, to enable them to undergo the fatigues of the chase, or preserve their health to old age? Nay. But how has civilized man, who has been pretending to ameliorate the condition of these wild wanderers of the forest, destroyed thousands by the introduction amongst them of this intoxicating and poisonous beverage! If required for the support of strength, and the continuance of muscular exertion, surely the faithful servants of man, the horse and the ox, had more need of the bottle, than their masters. What says Dr. FRANKLIN, for the encouragement of the industrious, to whom he has given so many practical lessons, in the instructive history of his life? He states, that, while employed in a printing office in London, he totally abstained from all fermented and spirituous liquors; and yet was able to carry up stairs double the weight which any of his fellow printers could carry, all of whom, to the number of fifty, drank an enormous quantity of stimulating liquors.

But we would not wish it understood, that we condemn all other drink than water; this would be infatuation. Men do not become drunkards upon wine, or fermented liquors. Confine them to these, and prevent entirely access to ardent spirits, and we do not fear the result. In all countries where wine is abundant and cheap, and the customary drink of the inhabitants, we see a temperate people. Who ever sees drunkards in France? Here, alas, how

* See Dr. RUSH's Inquiry into the Effects of Ardent Spirits upon the Human Body and Mind.

great the contrast! Where can we walk our streets, or travel upon the roads, without continually meeting the loathsome, bloated face of the self-destroying inebriate? "Is it not humiliating," says the late distinguished statesman and philosopher, the ex-president ADAMS, "that Mahometans and Hindoos should put to shame the whole Christian world, by their superior examples of temperance? And is it not (says he) mortifying beyond all expression, that we *Americans* should exceed all other eight millions of people on the globe, as I verily believe we do, in this degrading, beastly vice of intemperance?" We become so familiar with these daily spectacles, that they produce but little sympathetic emotion; but society cannot be relieved of the many burthens of poverty and distress, which fill our *poor-houses*, as well as the depravity and wickedness which crowd our prisons, without applying a remedy to their cause. It is in vain to attempt to counteract effects, whilst the causes producing them, continue operative. "The Managers of the Society for the Prevention of Pauperism in the city of New York," in one of their annual reports, make the following statement upon "Intemperance in Drinking:" "This most prolific source of mischief and misery, drags in its train almost every species of suffering which afflicts the poor. This evil, in relation to poverty and vice, may be emphatically styled the *cause of causes*." And in conclusion, they state, "that, viewing the enormous devastations of this evil upon the minds and morals of the people, we cannot but regard it as the crying and increasing sin of the nation, and as loudly demanding the solemn deliberation of our legislative assemblies." We need not say what is the resemblance to this picture in our own city.

"Legislators," says Sir F. C. MORGAN,* "know no better expedient for the suppression of crime, than the exaggeration of punishment. If the dread of danger, or penal consequences, afford a stronger excitement than the temptation to crime, the most unprincipled villain will abstain from its commission; but give to that man an intoxicating fluid, which, by quickening the circulation, shall increase his courage, and at the same time hurry on his ideas, and obscure his powers of reflection, and the deed will infallibly be committed:" a very important consideration, which those

* See Sketches of the Philosophy of Life, by Sir F. C. Morgan, M. D.

who study the reciprocal influence of mind and body, should hold up to the view of such as pretend to control evil doers. What, we would ask, can avail the attempts of legislative bodies, to apply remedies to the increasing burthens of pauperism, and the prevalence of vice, if these be produced by the unrestrained indulgence in the use of ardent spirits? MONTESQUIEU has very justly observed, "there are two sorts of corruption, the one, where the people do not observe the laws, and the other, where they are corrupted by the laws; an incurable evil, because it is the very remedy itself."

The very interesting investigation into the subject of pauperism, which has of late years taken place in England, and the inquiry also, by a committee of the house of commons, into the police of the metropolis, all go to prove, how conspicuously like causes have produced like effects in that island. We have not room here to make an abstract of the disclosures upon which these facts are founded; but the whole development well deserves the perusal of every reflecting member of our profession, as well as of our legislators, and every person feeling interested in the public welfare.* The great progress made, of late years, in the cause of humanity, is indeed animating and encouraging, both to the statesman and philanthropist. "And the reason of this great advancement," says an English medical writer, when speaking of the amelioration in the condition of those confined in prisons, madhouses, &c. "has been the acknowledgment of the principle, that without knowledge to guide, and sense to regulate the feelings, the best intentions will be frustrated." "Humanity," says the same writer, "has in fact begun to be studied as a science, and no profession, we believe, has such opportunities of promoting the desirable change, as that to which we have the honour and happiness to belong. None has such opportunities of estimating the height, depth, and breadth of human misery; and none, may we not say, does more to alleviate it. The benevolent may form the most beautiful plan for the alleviation of human pain; the archi-

* See Considerations on the Poor Laws, by JOHN DAVISSON; and ROSCOE on Penal Jurisprudence.—Also, several ably written papers upon the Report of the select committee of the house of commons, appointed to consider the poor laws, in the Edinburgh and London Quarterly Reviews.

tect may construct the most beautiful edifice for the reception of human misery; but, unless both of them be equally founded on that practical knowledge of man, which our profession has such opportunities of acquiring, they will be equally futile and useless."

Having the advantage of the lights and beacons which the experience of centuries past has placed before our eyes, how are we, on this side the Atlantic, where we boast so much of freedom and happiness, profiting by them? Are we not running on the same rocks and shoals, which have proved dangerous to others? At this enlightened day, and in this enlightened country, it is time for the introduction of those higher and better principles of legislation, which are calculated to prevent crimes, rather than punish for the commission of them. "Whilst the revenues of government are derived," says Roscoe, in his work on Penal Jurisprudence, "from the crimes of the people, it is in vain to hope that any efforts, either to reform their morals, or restrain their enormities, can be attended with success."

When there is danger of the introduction of pestilence and disease from abroad, by the commercial intercourse of nations, the members of the medical profession are appealed to for advice and counsel; their decisions influence the deliberations of legislative assemblies; quarantine regulations and health laws are enacted, which embarrass commerce, and subject to great inconvenience and pecuniary loss, thousands, who must submit without a murmur. And why should we not be consulted upon the means of shutting out this great source of disease and moral pestilence, *intemperance*, which most assuredly causes more deaths than all the quarantine laws prevent? If there is cause for the restraining power of the law, to protect us from the one source of disease and death, why not grant us the like guardian care in securing us from the other? Whilst weak and irresolute man has access to spirituous liquors, we can see no remedy for the deplorable evils they inflict upon him. It is only, as we apprehend, by total deprivation, we can restrain him from voluntarily surrendering himself to be destroyed by this deadly poison.

The utter hopelessness of the reformation of the habitual inebriate, a very striking and lamentable fact, must have often forcibly arrested the attention of every observing member of the

medical profession. Some few solitary instances to the contrary have, perhaps, come within the knowledge of most; but what a sorrowful proportion do they bear to those who sink, the victims of their gross and degrading habits, loathsome to themselves, and to all around them! Who, amongst our medical brethren, have not seen numbers addicted to this vice often cease for a time from their habits of intemperance with remorse and disgust; but, alas, only soon to return again, to drown compunction in the bewitching bowl, which buries in oblivion the anguish it produces?

We have not kept a record of all the cases of habitual intemperance coming under our notice, but they certainly have not been less than some hundreds; and not one instance of permanent reform, to our knowledge, ever took place amongst them. It has been said, and, from a good deal of observation, we should say the statement is not exaggerated, that not more than one in five hundred of those addicted to this odious vice, ever reform; a consideration which has often appeared to us awfully alarming, and calling impressively upon those in authority, to guard these deluded objects of our commiseration from the pestilence they cannot resist.

Medical men, who are familiar with the laws which govern the animal economy, know how irresistible are the calls of the *stomach*. The inebriate, deprived for a time of his usual stimulus, soon feels the same craving anxiety for his accustomed draught, which is felt in the stomach of another, starving with hunger. What can restrain the powerful calls of the appetite for food, if access be possible to the means of its gratification? Just as irresistible, we are persuaded, are the demands of the stomach in the unhappy victims of spirituous potation. It is in vain to persuade them, it is in vain to reproach them; they are as deaf to religious expostulation, as to the threatened terrors of the law. If their comforting beverage is to be had, have it they will, at any sacrifice.

This inevitable fate, which awaits these deluded sensualists, and the great mortality which ardent spirits occasion, we are persuaded, the public are not sufficiently apprised of; but we hope this truth will be brought into their notice, again and again, till it obtains that solemn deliberation which it certainly demands.

We solicit of our medical readers, the serious consideration of

this subject, not according to our imperfect representation of it, but as it is in its own nature and infinitely momentous consequences. The members of our profession may undoubtedly lend a powerful and much needed assistance to the friends of humanity, who have long laboured, with painful and discouraging solicitude, to lessen this great evil. We are under a two-fold obligation to hold up to view its awfully desolating effects, and assist in its removal; as physicians, bound to watch over the public health; and as good citizens, bound to promote virtue, and discourage vice.

The preservation of the lives and morals of millions yet unborn, if not the stability and duration of the government under which we live, may depend upon our efforts to awaken the attention of the public to a true sense of their danger from this cause. Enough is every day seen in our streets and highways, to excite alarm; but they who visit the haunts of the poor, and the bed-side of the thousands of inebriates, perishing every day from intemperance, throughout our country—they only can unfold to the view of our legislators, and those in authority, the real picture of sorrow and sadness which drunkenness exhibits. Let us not, then, neglect the performance of this part of our duty, but with patient perseverance, use all our influence to effect the utter banishment of those poisons, called distilled spirits, from our land.*

* To exhibit, in one point of view, the influence of ardent spirits amongst the poor in Philadelphia alone, and we believe it is quite equalled in the cities of other states, and in some excelled, we will here make a statement of the number of paupers received in our poor-house, or alms-house, during the last five years; nearly all of whom, it is well known, are reduced to poverty, and obliged to seek this asylum, from habitual intemperance, either practised by themselves, or those who should support them at home. We will also state the quantity and the cost of the spirituous and other liquors used in the house during the same period; which will show what an expense the public incur, merely in what is thought to be the necessary stimulation of these poor inmates, to keep them alive; without counting any other cost.

From the 22d of May, 1821, to the 22d of May, 1826, there were admitted in the Philadelphia Almshouse, 65,065 paupers, making an average of 13,013 received in each year; of the whole number admitted in the five years, 28,435 were men, 29,041 women, and 7,589 children. During the same period, the managers, in their annual accounts, state, there were used in the medical and surgical wards, 3,993 gallons of ardent spirits, besides

ARTICLE VI.—*Case of Recovery from the Narcotic Effects of Opium, by means of Artificial Respiration.* By HUGH J. OGILVIE, M. D. of Madison, Morgan County, Georgia.

ON the 26th of September last, I was in attendance on Mrs. R. who had been delivered, ten days prior to my visit, of a strong and healthy child. From the rude and officious interference of the midwife, at the time of delivery, considerable injury, or abrasion of the meatus urinarius, had ensued; attended with retention of urine, and extensive inflammation, towards the termination of her convalescence. I prescribed an anodyne at bed-time, consisting of twenty-five or thirty drops of laudanum: through mistake, the dose was administered to the infant, whom I found in the following condition, on repeating my visit early the ensuing morning. Face of a dark, livid colour; respiration slow and oppressed, repeated about six or eight times a minute; pulse slow, weak, and tremulous; extremities cold; coma, and *diluted pupils*. I was informed, that it had had several convulsions a few hours after receiving the narcotic draught. I inquired if any thing had been administered, and was informed that it could not swallow. Not relying explicitly upon the assertion, I directed an infusion of coffee, and on attempting its administration, found the power of deglutition suspended.

Viewing the case as desperate, and beyond the ordinary resources of the profession, it occurred to me, from the peculiar state of respiration, that if that function could be sustained, the life of the infant might be saved. Accordingly, a female attendant was requested to close the nostrils, and blow into its mouth, and press upon the abdominal muscles and diaphragm, so as to carry

wine, porter, ale, and cider, the cost of the whole of which is set down at 8,882 dollars and 57 cents.

Now, if spirituous liquors had not been accessible, "*that bane of human nature*, and most pernicious discovery ever made by art," as it is emphatically styled by the present Professor HOME, of Edinburgh, how different would have been the situation of most of these poor, unhappy dependents! How different, too, the demands upon public bounty! Society has long mourned over this cause of depravity; it is time to do more.

on artificial respiration. This was persevered in for half an hour, without much apparent amendment, except an occasional convulsive effort to expire the air blown in. Perseverance was enjoined, and in two or three hours, I was informed that respiration was completely re-established; the face assumed its natural colour, and all the functions were restored to their normal condition. No unpleasant symptoms ensued, and the child is now in the enjoyment of perfect health.

REFLECTIONS.

I was induced to adopt the practice instituted in the above case, from having noticed, in a periodical work,* a report of a similar case, by a physician in Boston, whose name I have forgotten. The case alluded to was unsuccessful, but the theory which suggested the remedy, was in perfect accordance with my own views. Opium in large quantities operates primarily upon the nervous system, and is mainly expended upon the respiratory and sympathetic ganglia. It therefore follows, as a necessary corollary, that if respiration can be sustained by artificial means, till the sedative influence of the opium has been subdued by the recuperative energies of the system, life may be restored. If my opinion of the modus operandi of opium be unscientific, or erroneous, the practical deduction may, nevertheless, be of service. These views, however imperfect, I hope may be the means of attracting the genius and talent of some one more adequate to its elucidation. Should a more extensive trial of the remedy be attended with success, we have another auxiliary that will tend to lessen the opprobria medicorum.

* Vide vol. ii. p. 180, of this Journal, for the case related by Dr. J. Ware, of Boston, from the New England Journal for April, 1826. This practice was founded on the experiments and observations of the distinguished physiologist, Mr. Brodie.

ARTICLE VII.—*On the Treatment of Anchylosis, by the Formation of Artificial Joints.* A new operation, devised and executed by J. RHEA BARTON, M. D. a Surgeon of the Pennsylvania Hospital.

I BEG leave to call the attention of my professional brethren to the following paper, believing that it contains some new views, in relation to a deformity and lameness, hitherto, I think, excluded from the surgeon's list of curable complaints, and one of the opprobria of our art; I allude to a *firm, bony anchylosis* of the human joints.

It is well known, that no such deformity can be established, until the original natural structure of a joint shall have undergone an entire change. The beautifully polished cartilages tipping the articulations, which, when supplied with synovia, admit of such perfect movements over their surfaces, must previously be absorbed, leaving only the two rough ends of the bones to unite, and become incorporated, and, as it were, one bone. It is not surprising, therefore, that we should not have bestowed upon such defects a second thought, in reference to a cure; since parts once gone, cannot in living matter be replaced, as they may be in machinery of human construction. The restoration, therefore, of a natural joint, once destroyed, being impossible, what has always been our course to persons thus afflicted? It has been, to apprise them of their *irreparable* loss; leaving time only to reconcile them to a misfortune, entailed on them through after life. Having witnessed, about sixteen months ago, a most distressing instance of deformity and lameness, from an injury of the hip joint, it aroused me to much reflection on this subject, that eventuated in my adopting views, and a course of practice, which shall hereafter be detailed. I will relate the case referred to.

John Coyle, native of Philadelphia, twenty-one years of age, sailor on board the schr. Topaz, Captain Schyler, states, that on the 17th day of March, 1825, he fell from the hatchway into the ship's hold, upon the end of a barrel, a distance of about six or seven feet; that the force of the fall was sustained on the out side of his right hip; violent pain was the immediate consequence, and much tumefaction ensued; that after the injury, he arose with difficulty, and attempted to walk; thinks he made one or two

steps, but was compelled to retire to his hammock, where he laid contracted for the space of about eighteen days; was then taken into Porto Cavello, and conveyed to the hospital. When lodged upon his bed, he placed himself on his side, with the injured limb uppermost, drawing the thigh to a right angle with the axis of the pelvis, and the knee resting on the sound side. In this posture he continued, without any material alteration, for the space of about five months; in the meantime, enduring all the suffering attendant upon a high degree of inflammation of one of the largest joints in the human body, and unalleviated by the support of splints, or a judicious antiphlogistic course of treatment. As might naturally be expected, a rigid and deformed limb was the result of such disease, combatted only by the administration of some simple liniment.

With regard to the real nature of the primary injury sustained, little can be said. The opinion on this point, of the medical attendant, under whose special care the patient was placed in the hospital, is not known. Dr. MURPHY, surgeon general, who occasionally saw him, believed it to be a dislocation. On board of the Topaz, previous to his removal to the hospital, two physicians, belonging respectively to an English and French vessel of war, laying in port, inspected the limb, in company with the American Consul, Dr. LITCHFIELD. Two of these gentlemen thought there was fracture; the French physician believed it to be some form of luxation. It is certain, therefore, from the difference of sentiment, that there was much obscurity in the case.

In October, 1825, Coyle returned to Philadelphia, having been sent home by our Consul.

Early on his arrival, he exhibited himself to me. He was then supported by crutches, having the thigh drawn up nearly to a right angle with the axis of the pelvis, and the knee turned inward, and projecting over the sound thigh; so that the outside of the foot presented forward. There was considerable enlargement round the hip, which so much obscured the case, even at this date, as to prevent me from forming any positive opinion as to the real nature of the original injury. From the fixed and immovable condition of the limb, it was impossible to ascertain whether, in a straight position, there would be shortening, and, if any, to what extent. The general feature of the limb bore *somewhat* the

resemblance of that resulting from a dislocation into the ischiatic notch; yet the position in which the great trochanter stood, in relation to the superior anterior spinous process, discouraged such a belief. All things considered, I was rather inclined to the opinion, that there had been neither fracture nor luxation; but that the violence of the fall had produced an extensive contusion of the round ligament and joint, and that disorganization had followed the consequent inflammation. On this point, whatever might have been the nature of the accident, I thought I might feel assured, that *now* all articular movement was gone, and that true anchylosis had taken place. Trusting, however, to the fallibility of my judgment, and wishing, for the patient's sake, that it might prove erroneous, I was induced to admit him into the Pennsylvania Hospital, with the view of employing extension on the limb for some weeks, in hopes that its malposition might thereby be corrected. A perseverance, however, in this treatment, only proved the unalterable state of the hip-joint, and confirmed my early formed opinion. He subsequently fell under the care of my estimable friends and colleagues, Drs. Hewson and Parrish, in their respective tours of surgical attendance in the hospital, where we several times considered his case in consultation, and were united in our final decision, that any further attempts to release the joint would be useless.

Finding Coyle still in the hospital, a year after his admission, much reflection on his case led me to propose to my colleagues, the following operation, viz. To make an incision through the integuments, of six or seven inches in length, one half extending above, and the other below, the great trochanter; this to be met by a transverse section, of four or five inches in extent; the two forming a crucial incision, the four angles of which were to meet opposite to the most prominent point of the great trochanter; then to detach the fascia, and, by turning the blade of the scalpel sideways, to separate anteriorly all muscular structure from the bone, without unnecessarily dividing their fibres. Having done this, in like manner, behind and between the two trochanters, to divide the bone transversely through the great trochanter, and part of the neck of the bone, by means of a strong and narrow saw, made for the purpose; this being accomplished, to extend the limb, and dress the wound. After the irritation from the ope-

ration shall have passed away, to prevent, if possible, by gentle and daily movement of the limb, &c. the formation of bony union; and to establish an attachment by ligament only, as in cases of ununited fractures, or artificial joints, as they are called.

In this proposition, four material points presented themselves for consideration, viz. the practicability of the operation; the degree of risk to life, consequent thereto; the probability of being able to arrest ossific re-union; and the reasonable prospect of benefiting the patient thereby. The arguments I adduced in favour of such an operation, were these: That the anatomy of the part did not present any insurmountable obstacle to it. The fear of cutting into a joint was not to be entertained here, since, from previous disease, all the characteristics of a joint were gone; synovial membrane destroyed; cartilages absorbed; and an amalgamation of the head of the femur with the acetabulum, had taken place. That the shock to the vital system would not, probably, be greater than is frequently endured from accidental injuries, and other operations. That, if the opinion commonly assigned as the cause of the formation of false joints, after fractures, be true, such as frequent motion in the broken ends of the bone, a deficiency of tone in the system, &c. these agents could be resorted to with promising results.

In order to decide the important question, as to the benefit which the patient might reasonably be expected to derive from such an operation, it was necessary to consider how nearly a joint, thus artificially formed, would resemble, in its construction and functions, the natural articulation. What change the divided ends of the bone would undergo; whence would be derived its cartilaginous surfaces, its ligaments, its capsule, and its synovia; and, finally, what was to restrain its undue motions. My hopes of improving his condition, were founded upon the following facts and observations in relation to these points. That a bone, once divided, in a person otherwise healthy, must again unite, either by bone or by ligament; no case, to my knowledge, being on record, where a broken bone remained always afterward destitute of attachment between the divided extremities; except in cases where one of the fragments has been so small, or so scantily supplied with blood, as to be unable to contribute its part in the restorative process; being sufficiently vascular only to retain its

own vitality, as in case of the separation of the head of a bone. If, therefore, ossific union should be arrested, ligamentous adhesions would maintain the connexion. Writers observe, and it is confirmed by my own experience, that when a fracture does not become consolidated, in the course of time, the rugged edges are removed by absorption; the separated ends become condensed, smooth, and polished, and tipped with a kind of cartilaginous substance; they are likewise inclosed within a sort of capsule. Observation has also proved to me, that this ligamentous structure, formed around and connecting the ends of an old fracture, is possessed of great strength; so much so, that I have, in several instances, witnessed persons sustaining the entire weight of their bodies on the ligaments of a false joint, requiring only lateral support to the limb. The freedom and latitude of motion, in such cases, and total insensibility to pain, after a sufficient lapse of time, I had also witnessed, and were encouraging arguments. In the operation here proposed, no such great strength of ligaments as will support the body, would be required; since, from the *transverse* section of the trochanter, bone will rest against bone, and strength in them sufficient only to prevent dislocation, would be necessary. From my inquiries into the manner in which this joint was to be lubricated, I did not expect that a synovial membrane and fluid, in all their characters, would be generated; but ample proofs were not wanting, of the immediate resources of nature in defending parts from injurious friction, in whatever point of the body it might be required, either by an exhalation from the adjacent structure, or by the intervention of a bursa. In the common false joint, where motion is discouraged as much as possible, sufficient moisture is there exuded to prevent painful attrition. It might reasonably be expected, therefore, that where motion was continual, the lubricating moisture would be more abundantly exhaled. In un-united fractures, the false joint is uncontrollable, because there are no muscles specially adapted for its restraint; but in the joint thus to be formed, *the will* alone must influence its movements; since nearly all of the muscles which exercised their control over the original joint, would be carefully preserved, to have a similar power over this; which is, in fact, a mere transfer of the point of articulation and resistance, from the head of the bone in the ace-

tabulum, to the upper end of the shaft of the femur, against the great trochanter.

Although I did not think it essential to the melioration of my patient's condition, that the ends of the bone should at its section undergo any change, further than by the absorption of the asperities, I did believe, that nature would not passively witness my labours to effect what she has so often herself endeavoured, unaided by art, to accomplish; but that she would be ready to co-operate with me, and to extend to completion, that which human art alone would be incapable of—the formation of a new and useful joint, as a substitute for that which disease had annihilated, either by the conversion of the trochanter into a socket, or by some more wise design. Dissections of old luxations, and of fractures, near joints, present many ingenious and wonderful alteration of original, and depositions of new structure, to restore the functions and uses of parts impaired by accidents and disease. All authors notice these attempts at restoration. Sir ASTLEY COOPER, in his "Treatise on Dislocations and Fractures of the Joints," has particularly mentioned them, and given many interesting plates, illustrative of nature's unassisted achievements. Such circumstances strongly encouraged me in the experiment, and were considered as auguries of a favourable result.

These views were fully explained to my colleagues, and were accompanied by the assurance, that my patient had been fairly apprised of his present condition, and of the nature and intentions of the operation proposed; that he had not merely acceded to it, but that, after placing his sufferings, the difficulties, risks to life, the chances of failure, and the dangers eventually of aggravated lameness, in the strongest and most exaggerated light, he had expressed his willingness to endure any pain, or duration of suffering, and to subject himself to all hazards, for the remotest prospect of relief.

Accordingly, on the 22d day of November, 1826, assisted by Drs. HEWSON and PARRISH, I proceeded to the operation publicly in the Pennsylvania Hospital.

To a large medical class, and many respectable physicians, assembled, I again represented the nature of the case, and of the operation, and the views and course of reasoning which induced me to adopt it; stating, likewise, that I wished it to be distinctly

understood, that a submission to my contemplated plans had not been urged upon my patient by any false or delusory promises; but that an explanation of his existing condition, and of the means proposed to be attempted for his relief, were fully made to him, in language adapted to his right comprehension of the matter, as well by my colleagues, as by myself; and that he had authorized me thus publicly to state, that he was prepared to assume all and the exclusive responsibility for the issue.

With this exculpation, therefore, the operation, as already detailed, was put into effect. The integuments and fascia being divided and raised, the muscles in contact with the bone, around part of the great trochanter, were carefully detached, and a passage thereby made, just large enough to admit of the insinuation of my fore-fingers, before and behind the bone; the tips of which now met around the lower part of the cervix of the femur, a little above its root. The saw (see plate, fig. 3.) was readily applied, and, without any difficulty, a separation of the bone was effected. The thigh was now released, and I immediately turned out the knee, extended the leg, and placed the limbs side by side; by a comparison of which, in reference to length, the unsound member betrayed a shortening of about half an inch. This might have been caused partly by a distortion of the pelvis. Not one blood-vessel required to be secured. Union by the first intention was not attempted; the lips of the wound were only supported by adhesive plaster and slight dressings. The patient was put to bed, and DESAULT's splints were applied, to support the limb.

The operation, though severe, was not of long duration, it being accomplished in the space of about seven minutes.

In the evening, the patient suffered great pain, and was much prostrated; his pulse feeble, stomach irritable, with great restlessness. Opium, grs. ii. were given.

Nov. 23, (following morning.) Vomiting inordinate; had a bad night; pulse feeble and irritable; limb painful, particularly along the fore-part of the thigh; no nourishment retained. Prescriptions, during the day, opium and soda water; in the evening, opium and camphor, neutral mixture, sinapism over the epigastric region; which afforded him much relief. Some hæmorrhage from the wound.

24th. Irritability of the stomach much allayed—pulse still fre-

quent and feeble. Examined the wound superficially—no union—lips of wound much swollen and everted—very painful. Prescriptions—opium, and cordial nourishment.

25th. Stomach improved—much pain in the bowels, which was relieved by a laxative enema. Opium and milk-punch given.

26th. Pulse very frequent and weak—wound not unfavourable. Poultice applied.

27th. Pulse as yesterday—not quite so much pain—approaching suppuration.

28th. Some pus secreted.

30th. Pulse frequent, but less irritation in it—wound suppurating.

Dec. 1st. Whole surface of wound covered with healthy granulations.

7th. Granulations vigorous and contracting—matter copiously secreted from the cavity of the wound, and from under the fascia over the rectus muscle. This discharge I ascribed to the forcible separation of the rectus muscle from its aponeurotic covering, to which I supposed it had adhered in consequence of previous inflammation, and during the state of quietude and contraction of the limb. Prescriptions—decoction of bark, cinnamon and serpentaria—milk-punch and opium continued—simple dressings to the wound—compress and many-tailed bandage to the thigh.

20th. Patient's limb and general health have been regularly improving, until this evening, when, from some indiscretion in diet, he was assailed by a most violent flatulent colic, which resisted all the ordinary and powerful remedies. At the suggestion of my judicious friend, Dr. Parrish, I resorted to dry syringing, and to this I attribute his relief.

21st. Somewhat exhausted by last night's indisposition—otherwise comfortable—wound cicatrizing—pus diminishing in quantity.

Jan. 20th, 1827. During the past month, no circumstance has occurred, as to the patient's general health, or the appearance of the wound, which deserved particular notice, except that the sore regularly diminished in size, and his strength increased. It must now be particularly noticed, that, in addition to the treatment already mentioned, after the twentieth day from the operation, the limb was cautiously moved in such directions as resembled

the natural movement of the sound hip-joint; but in doing this, I was careful never to use such violence, to continue it so long at a time, or to repeat it so often, as to occasion any permanent irritation. A sufficient time was always allowed, for the patient to recover from the soreness of the last motions, before the limb was again disturbed. At first, it was necessary to allow an interval of several days between the movements, in order to obtain a subsidence of the soreness.

In the course of a short time, however, the part became more insensible to pain from this disturbance, and the limb was more frequently moved. During the last three weeks, the patient was requested, at my daily visits to him, to exert his muscles, in slightly flexing, extending, and rotating his thigh. This he accomplished without difficulty, and, after a little practice, without pain. As an auxiliary step, he was occasionally propped upright in bed, so that his pelvis might be at an angle with his thigh.

21st. It is just sixty days since the operation was performed. The wound having now entirely healed, and all appearances of inflammation gone, Coyle, with careful assistance, left his bed, and, aided by crutches, stood erect, both feet reaching the floor; he thinks he bore ten or twelve pounds weight on the weakened limb for a few minutes; made an attempt to advance the leg, and did so exclusively by muscular exertion; then rested on the sound side, and rotated the knee, and says, without pain. He was then placed in a wheeled-chair, and moved to the fire, where he sat, with both feet down, for about an hour; then retired to bed.

22d. Last night, the limb felt a little sore, from the exertion of the preceding day—otherwise well—considerable fluctuation discoverable along the direction of the rectus femoris.

23d. A quantity of synovial fluid escaped by a very small sinuous opening in the cicatrix, unaccompanied by pain, or other inconvenience. This discharge evidently came from the theca of the rectus femoris, and appeared to have been secreted in such superabundance, in consequence of the great excitement produced in this structure, after having been so long in a state of inaction—patient, in other respects, doing well.

24th. No synovia discharged—patient easy and comfortable.

25th. No particular change.

26th. Coyle arose, and with the assistance of crutches, made an

attempt to walk. At this trial, he fairly used the weakened limb, alternately with the sound one, four or five steps in progression, and was then seated in his chair. In the course of the day, he repeated his attempt, and succeeded in walking, backward and forward, a room of ordinary size, using each limb alternately, and making fair and natural steps.

27th. Patient, in the presence of the medical class of the hospital, walked around the room several times; then held out his crutches, showing that he was capable of sustaining much of the weight of his body on the limb, without pain. On being asked, whether he felt as if he had, at the hip, solid support for his body, he answered in the affirmative.

28th. Improved in walking, and other movements of the limb, and in general strength—was able to stand alone, and firmly, without crutches.

29th. Improvement continued—stood without support at the bed-side, and arranged the pillows, &c. previous to reclining.

30th. Doing well.

31st. Patient dressed himself, and walked, with the assistance of his crutches, to the managers' apartment, a distance of about one hundred and fifty feet. Dr. Hewson and myself now examined him particularly, to ascertain the muscular control he possessed over this newly formed joint. We found him able to perform flexion and extension, abduction and adduction, rotation inward and outward, and able to cross the opposite foot; he had, then, in fact, regained every movement which the limb originally possessed.

Feb. 8th. Patient's strength, local and general, has been daily recruiting. To-day, he walked about ninety or one hundred yards; and with aid, got into a gig, and rode to an extreme part of the city, a distance of about five miles; felt no pain, except at one or two unavoidable jolts; returned, and felt no fatigue.

12th. Improvement regular—stands alone, and without support—can walk with two canes only.

13th. During the night, my patient, whilst dreaming, gave his limb a violent twist; in consequence of which, I found him this morning in excessive pain, accompanied by a good deal of headache and fever—the thigh bore marks of approaching inflammation. In the course of the day, an erysipelatous blush, with tumefaction, was apparent in the vicinity of the joint, and on two or

three insulated spots on the thigh. The limb was kept perfectly quiet, and lead-water applied.

14th. Fever much abated—erysipelas subsiding, but has caused the cicatrix slightly to ulcerate—no pain in the joint. Emollient poultice applied.

15th. Fever subsiding—erysipelas disappearing—no pain.

16th and 17th. Doing well—simple ointment substituted for poultice—inflammation gone.

18th. Patient left the bed, to resume his exercise—found himself much weakened by his recent attack, but no pain in the new joint—motions continue unimpeded.

19th. Patient up, and walking about—not yet recovered the strength which he had acquired previous to his erysipelatous attack.

24th. Patient has been daily walking about, and gaining strength.

March 1st. Since the last report. my patient has been rapidly gaining strength. His appetite is good. The ulcer, occasioned by the erysipelas, which, at no time, was more than a mere abrasion of the surface, and not in the slightest manner affecting the joint, may be considered as well. He sleeps soundly, either on his back or side. He arises in the morning, and retires not until night; in the meantime, amusing himself by exercise in walking, which he now begins to accomplish by the aid merely of a cane; time only seems to be required to enable him to walk without even this assistance. The following is the degree to which he can perform the movements of his limb with perfect ease: By measurement from a straight line, he can advance the foot twenty-four inches; in stepping backward, twenty-six inches; in abduction, twenty inches; in rotation inward, six inches, and outward, six inches.

ANATOMICAL CHANGES IN THE LIMB.

An entire destruction of the hip-joint; the head of the femur immovably fixed in its acetabulum by anchylosis; an artificial joint formed between the two trochanters and part of the neck of the bone; a quantity of dense ligament formed around and supporting this joint. The glutei medius and minimus, obturators externus and internus, and pyriformis, remain passive, and are of

no further use, as their origin and insertion are at points, between which there is no motion. The interior portion of the quadratus femoris was left attached below the section of the bone; but it is probable, that its usefulness has likewise been destroyed by the alteration of structure, which these parts must have undergone in the formation of the new joint. The loss of these muscles is supplied by the action of those that originate above, and are inserted below, the artificial joint.

As the patient has regained every motion of the limb which he originally possessed, it is interesting to know what muscles have assumed the offices of those that have been lost. In my calculations, previous to the operation, I took the following view of this subject.

Flexion and extension, I supposed, would be performed by all the muscles which had those actions on the former joint, except the iliacus internus and psoas magnus; the power of these, as flexors, I feared would be lost, from the mechanical disadvantage under which they would act, owing to their insertion so near to the part to be moved. Rotation outward would, in future, be performed by the action of the iliacus internus and psoas magnus; rotation inward, by the tensor vaginæ femoris; abduction, by the simultaneous action of the tensor vaginæ femoris and gluteus maximus; adduction, by the triceps adductor; and circumduction, by the alternate action of all the muscles of the thigh. This I believe to be the present state of muscular influence.

Upon examining for the space that usually exists between the projection of the great trochanter and the posterior margin of the acetabulum, it will be discovered that it has been filled up by an accumulation of osseous matter, apparently deposited there to prevent displacement of the bones, and to form something like a socket.

The outward contour of the hip resembles that of the sound side, except in the disfigurement occasioned by the extensive crucial incisions.

When the legs are extended, a slight shortening of the right limb is perceivable, but not sufficient to cause him to limp in walking. The thickness of the blade of the saw, taken from the length of the femur, and the subsequent change of the divided surfaces, might have caused this retraction of the limb. When

the knees are drawn up, there is an increased shortening, which again disappears as they are extended. By placing the hand over the upper part of the trochanter, and moving the limb, that portion of the bone will be found perfectly at rest; but when the hand is lowered to the part where the joint has been formed, the articulation is satisfactorily felt. The sensation conveyed to the hand is not like that occasioned by two bare surfaces of bone rubbed against each other, but like that imparted by the motions in a natural and healthy joint.

Having now established the fact, that an artificial joint can be substituted for the loss of the natural articulation at the hip, it becomes a matter of importance, to ascertain how far the same principles are applicable to the formation of new joints in other parts of the body, where natural motion has been lost. My reflections on the point, have not presented any forbidding circumstances; but it is not in every joint, that the loss of motion would be sufficiently important to call for the aid of a painful operation. The most serious evil is sustained by the loss of the hip, knee, shoulder, elbow, great toe, and finger joints, and of the lower jaw; and these, I believe, may all come within the reach of amendment by an operation, if the muscles which move these respective joints are in a sound and efficient state. If they have been lost, it would be palpably wrong to form a joint, since its unrestrained motion would be more troublesome than a rigid limb. A transverse section of the bones would be proper, if the operation were to be attempted at the shoulder, knee, fingers, or toes; but an angular division would be necessary at the elbow, in order to preserve some resemblance to the natural joint at this part. I have, therefore, given in the plate, a sketch of an anchylosed elbow, in the straight and angular position, and the manner in which the section would be most advantageously made.

I hope I will not be understood as entertaining the belief, that this treatment will be applicable to, and judicious in, every case of anchylosis. I believe the operation would be justifiable *only* under the following circumstances, viz. Where the patient's general health is good, and his constitution is sufficiently strong; where the rigidity is not confined to the soft parts, but is actually occasioned by a consolidation of the joint; where all the muscles and tendons, that were essential to the ordinary movements of the

former joint, are sound, and not incorporated by firm adhesions with the adjacent structure; where the disease, causing the deformity, has entirely subsided; where the operation can be performed through the original point of motion, or so near to it, that the use of most of the tendons and muscles will not be lost; and, finally, where the deformity, or inconvenience, is such, as will induce the patient to endure the pain, and incur the risks of an operation.

EXPLANATION OF THE PLATE.

Fig. 1. Represents the condition of the patient previous to the operation.

It will be observed, that the distortion of the limb was so great, that the cripple's shoe which he wore, did not supersede the necessity for crutches; but that its tip only reached the ground, when the ankle was extended.

Fig. 2. Is explanatory of the alterations in the bony structure, first by disease, and subsequently by the operation.

a. Two faint lines, representing the direction of the femur, in correspondence with the thigh, in fig. 1.

b. The head of the femur, and acetabulum; all motion between them arrested by anchylosis.

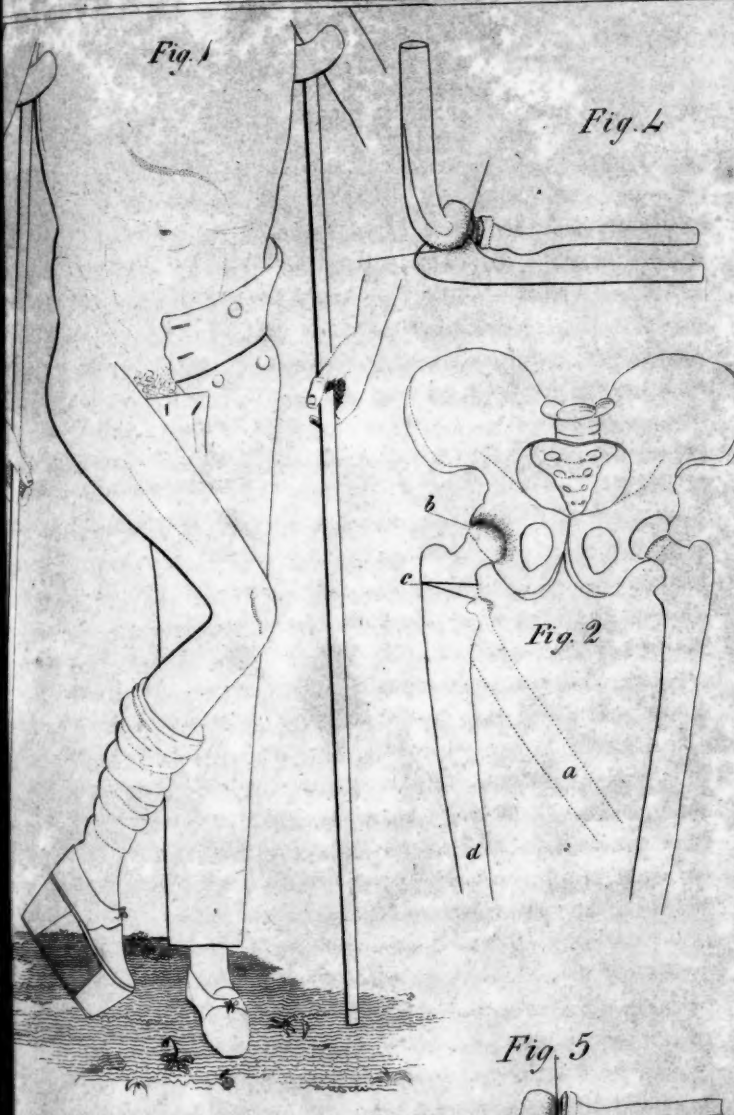
c. The point at which the bone was transversely sawn through, and the triangular gap at the section, occasioned by bringing down the thigh.

d. The femur, restored to its natural position after the separation of the bone.

Fig. 3. The saw used for dividing the bone; the blade about six or seven inches in length, and thinner on the back than on the edge; the end smoothly rounded off, to avoid piercing parts before it; teeth widely set.

Fig. 4. The elbow-joint anchylosed at a right angle; the line represents the direction in which the bones might be divided by a long and narrow saw.

Fig. 5. Anchylosis of the elbow-joint, with the bones in a straight line, showing the manner in which the section might be made when the limb was thus fixed.



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ANALYTICAL REVIEWS.

ARTICLE VIII.—*A Treatise on the Diseases of Females.* By WM. P. DEWEES, M. D. Adjunct Professor of Midwifery in the University of Pennsylvania, &c. &c. Philadelphia. H. C. Carey & I. Lea. 1826.

THE appearance of a work by Dr. DEWEES, on the diseases of females, cannot fail to be hailed with much pleasure by every physician in America, as we are naturally led to anticipate much practical information from him, on subjects in which he has had a great deal of experience. This is the third or fourth volume with which this gentleman has favoured the profession, within the last three years; a circumstance which, itself, is a sufficient proof of the facility with which he writes. We are aware, that with many, this copiousness and rapidity are no recommendation; and we must confess, that, from what we have seen, we are inclined to the belief, that in general, the opinion is not unfounded; yet, in the present case, we think, that notwithstanding some defects, which we are willing to attribute to haste, the present work will, as a practical one, command great attention, not only from students, for whom, we believe, it was intended, but also from the general practitioner.

Before undertaking an analysis of the volume before us, we must beg leave to remark, that although no one entertains a more exalted opinion of Dr. DEWEES's skill, as an accoucheur, or as a general practitioner, than ourselves, we are not prepared to regard all his pathological views as placed beyond the reach of criticism. On these, therefore, he cannot be offended that we should differ from him, and express our opinion relatively to the points in which, we think, he has erred. This, indeed, is a privilege we should not feel very willing to relinquish on any account,—whatever may be the standing of the author whose opinions we are examining. On the present occasion, we assume it with so

much the more confidence, as "a just criticism is more welcome to a true philosopher, than the highest seasoned praise; the former promoting truth, the latter prejudicing it."

After a few preliminary observations on the peculiarities of the female system, Dr. DEWEES makes the following remarks on the subject of the predominant temperament of the sex.

"The peculiarities which we have thus briefly pointed out, necessarily render the female constitution one of marked and distinct character. The assemblage of the differences which constitute it, renders it, in general terms, one in which the solids are less dense and resisting, more relaxed and flabby, owing, probably, to the predominance of the cellular and nervous systems. The lymphatic system is more extensive than the sanguineous; which, it is supposed, gives to the female a greater quantity of fluid, than to the male.

"To these causes, or rather circumstances, is attributed the formation of the predominant temperament of the female constitution; namely, the sanguineous temperament; so much insisted on by ROUSSEL, and agreed to by VIGAROUS."

It is plain, that in this our author has followed very closely, and that too without much reflection, the last named author, who makes the *sanguineous* temperament of females consist in the greater quantity of cellular tissue, and the consequent softness of the organs, the predominance of the lymphatic system, to which he adds the excessive action of the nervous system, as well as the influence of the sexual organs, and principally of the uterus. We have said, without much reflection, because he might easily have found much better guides on the subject of temperaments, than VIGAROUS; and by adopting his views, has involved himself in a great inconsistency. Thus, by some attention to what the best writers on the subject mean by temperaments, it is not difficult to find that no one of these can be denominated sanguineous, which is marked by a predominance of the lymphatic over the sanguiferous system. That the first of these systems does, in general, prevail more extensively in the female than in the male sex, is a fact which we do not wish to deny; but that even in women of a sanguineous temperament, it is in greater excess than the sanguiferous system, is a thing which would have puzzled VIGAROUS to prove, and which Dr. D. is very far from having demonstrated. We have said, that Dr. D. by following too closely VIGAROUS, has involved himself in an inconsistency; and in order not to be accused of

making a groundless assertion, we take the liberty of extracting a short passage from a paragraph, in which he speaks of the lymphatic system of females.

"There is no peculiarity, perhaps, in it, except the lymphatic vessels are more numerous; and when they have a certain predominance, they constitute a temperament; and then, unfortunately for the possessor, it but too certainly becomes the seat of terrible, and often times incurable, diseases."

It is evident, that allusion is here made to the lymphatic or scrofulous temperament; now, how the predominance of the lymphatic system in this case, can serve to characterize the latter temperament, and, on the other hand, can exist over the sanguiferous system in the sanguineous temperament, is a thing which it will be difficult for Dr. D. to reconcile to the perfect satisfaction of all his readers. But this arose, we repeat, from following too closely VIGAROUS; for ROUSSEL understood the sanguineous temperament of females very differently from the latter, regarding it as the effect of the predominance of the sanguiferous system, combined, however, with a softer condition of the cellular tissue.

Dr. DEWEES does not feel disposed to attribute to the uterus the degree of influence which, by many, it is supposed to exert over every part of the body,—creating, aggravating, and modifying disease in every organ. Wishing, however, to convey his meaning in the clearest manner possible, he makes the following remarks, which we think sufficiently interesting to be transcribed here.

"First. We have ever found the unoccupied uterus to be one of great passiveness, when in a state of perfect health; and that, so long as it preserved this condition, it manifested no agency in the production of a disease, or in modifying it, if present. Thus, fever, inflammation either local or general, or spasm, has never appeared to us to derive advantage, or suffer inconvenience, from the influence of this organ.

"Second. That when in a state of disease, we have found several parts of the body sympathize with the uterus, as the stomach, the head, the breast, &c.: but precisely the same thing can be said of other parts of the body; for neither of which is such influence admitted as is claimed for the uterus. Thus, the brain, the stomach, the kidneys, the liver, &c. when in a diseased state, will have particular parts deranged, by a sympathetic influence; yet it has never been asserted, that either of these parts had, at any other time,

or under any other circumstance but disease, any agency in producing or modifying disease in any other portion of the body.

"Third. While the uterus is performing one of its functional duties, namely, forming the menstrual blood; when it is known to be in a state of excitement, and decidedly engorged with blood; a time when it would most likely exert an influence, if it really possessed any, we never find this organ betraying a power over other parts, so long as the functional process is carried on healthfully; and that, during this period, we have hitherto not been able to detect the slightest influence over any disease, that may have been present in the system; nor has it ever made us vary a prescription, or modify a treatment.

"Fourth. That when the menstruous function is performed with pain and difficulty, other portions of the system are found to suffer from sympathy; but in no greater degree, than these very parts have been known to suffer, when some other organ was the source of irritation. In dysmenorrhœa, we have known the back and stomach suffer severely; the first by pretty intense pain, the second by severe vomiting; but we have seen the same consequences attend an irritated kidney, or an inflamed neck of the bladder.

"Fifth. That, when this organ is labouring under severe disease, as inflammation, scirrhus, or cancer; where all its ordinary functions are either deranged, perverted, or suspended, and this for a long period together, we do not find that it involves the system in any severer penalties, than any other equally important viscus would do, under similar circumstances.

"Sixth. That when its functional powers are irregularly and imperfectly performed, or altogether suspended, by some derangement or power, if the general health suffers from this cause, it is not because the uterus has any superior power to effect this; but because one of the links is broken, (and we are willing to admit it to be an important link,) whereby the chain of healthy functions is maintained. A similar condition of any of the other viscera, would be followed by the same consequences.

"Seventh. That when the uterus is impregnated, various other portions of the system are deranged, in consequence of their strong sympathy with this organ; but even here, the complaints are not sui generis; for every one of them can be, and have been very often, simulated from other causes. The whole phenomena of impregnation are so well understood, as not to require reciting; but has not almost every body witnessed the whole train of these morbid sympathies to arise from very different causes?"

In a few succeeding chapters, Dr. DEWEES treats of the diseases of the external and internal organs, commencing with the tumours and excrescences which occasionally appear on the external parts. We have only room to remark, that when the excrescences are in the form of warts, and very numerous, Dr. D. has succeeded

in removing them, by keeping the parts very dry, and exposing them as much as possible to the air.

After treating of the diseases of the clitoris, of the adhesion of the labia pudendi of children, of the imperforation and too great density of the hymen, and after offering a few remarks on the diseases of the vagina, Dr. DEWEES comes to those connected with menstruation, which he prefaces by a long chapter on the history of this important function. After occupying three or four pages in refuting the opinion of ROUSSEL, that the menstrual is not an original function, but the result of civilization,—an opinion, which, so far as we know, no one, with the exception of EMMET, has ever thought worthy of adoption, our author remarks, that it is essential to propagation, that the internal surface of the uterus be in a healthy condition, manifested by a healthy catamenial discharge; "or, in other words, only when the quantity and quality of the menses are free from objection, and the ovaries free from imperfection." It is plain, therefore, that in his opinion, and, we believe, in the opinion of every intelligent physiologist, menstruation, when healthy, is, in general, a sign of fertility, unless there be a deranged state of the ovaria. On this subject, Dr. D. makes the following remarks:

"It may, therefore, be considered as highly probable, that the absence of the capacity to be impregnated, will sometimes depend upon the imperfect condition of either the uterus itself, or of the ovaries. If the former, it may consist in some derangement of the secreting surface of the uterus; and though there may be a regular discharge of a coloured fluid, and this so nearly resembling the perfect secretion as to deceive the senses, it may yet want an essential condition or quality, and thus entail barrenness; hence, all women are not fruitful, who may have a regular catamenial discharge; though, as far as can be judged of by appearances, this discharge is every way healthy, and at the same time the ovaries free from fault.

"Nor is this perhaps difficult to explain, or rather to imagine how this may happen. I adopt the opinion, that the menstrual discharge is a genuine secretion; and that the internal face, or lining, of this organ is the portion which furnishes it: now, it will be evident, that whenever this part is in any way deranged, its product must be impaired; but the injury does not consist so much in the imperfect elaboration of the menstrual fluid, as in the inability of this surface to furnish a healthy decidua after impregnation has taken place; for there can be but little doubt, that the same apparatus furnishes both one and the other. This condition of the uterus, I have reason to think, is not of frequent occurrence; an ovum may be fecundated, and

duly conveyed to the cavity of the uterus, but it is suffered to perish there, from the want of a healthy decidua; it is therefore cast off unperceived, at the next menstrual purgation, and the woman is relatively barren."

Dr. D. does not adopt the opinion of some writers, who maintain, that impregnation has sometimes taken place before the inception of the menses, as well as after their final cessation. He thinks, that in the former, the discharge of blood was preceded by a flow of serous fluid, which was overlooked by the physician; and that in the latter, an effort had been made by the system to restore the catamenial flux by a periodical serous discharge. A few interesting cases are given in support of this opinion, which we regret our limits will not permit us to transcribe here. Nor can we stop to notice the reasoning which Dr. D. offers in corroboration of these facts; for, although we view it as *plausible*, yet it is too conjectural to occupy our attention in this place.

As may have been seen from the above extracts, Dr. DEWEES regards the menstrual flux as the result of a secretory action of the lining membrane of the uterus, and not as pure blood. His reasons for entertaining this opinion have been long before the public, and are as follow: 1st. The colour of the fluid discharged is between that of the arterial and venous blood, being less brilliant than the former, and more florid than the latter. 2d. The first never separates into parts; whilst, on the contrary, blood drawn or evacuated from any other part of a healthy body, separates in a short time into its component parts. 3d. It never coagulates, though kept for years; while other blood, when free from disease, quickly does, when exposed to the influence of the air. 4th. Its odour is remarkably distinct from that of the circulating mass, and it is less disposed to putrefaction. This opinion, as may be seen, differs widely from that of many of the best writers of the day; who, although admitting, that the blood discharged during menstruation presents, in general, a few differences from that circulating in the vessels, nevertheless, consider the discharge as a modification of hæmorrhage. But although this is the generally received opinion, it does not follow, that the one adopted by Dr. D. on the subject is original with, or claimed by him. In this and other chapters, Dr. D. asserts, that the contrary view has been handed down from the time of HIPPOCRATES, "without inquiry or dispute;" that GARDIEN regarded it as an hæmorrhage in mere compliance with a precon-

ceived notion, "founded on no better ground than the weight of authority;" and that this opinion has been *copied* into almost all the books since the time of HIPPOCRATES. That the first of these assertions is not well founded, may be proved by our author's own admission, that "HALLER, BORDEU, SANDERS, JOHN HUNTER, &c. called menstruation, without hesitation, a secretion;" by two quotations he makes from RAMMAZINI, and his translator, FOURCROY, proving, that they both held the same language; and by his remarking that, from the manner in which this doctrine is mentioned by RAMMAZINI, it is plain it was not new when he wrote. Without the fear of contradiction, it may be affirmed, that no doctrine can, in justice, be said to have been received without "inquiry or dispute," which can enumerate among its opponents such a mass of authorities as the one the doctor has himself brought forward. Nor do we believe Dr. D. has evinced his usual liberality in the rest of his remarks and assertions, taxing, as he does, GARDIEN, and other accurate and close observers, of adopting and *copying* an opinion, without a due examination of the reasons on which it is founded; and that too, although a contrary opinion is to be found advocated in works of the easiest access. But, even supposing that GARDIEN was susceptible of this blind attachment to ancient authorities, the same accusation cannot, with any semblance of justice, be brought forward against a BICHAT and a BROUSSAIS, who assuredly are as much entitled to the appellation of *original observers*, as any author with whom we are acquainted; and yet they both advocate, in the most positive terms, the hæmorrhagic nature of the menstrual discharge!

Dr. D. very properly adopts the opinion of those who consider the uterus to be lined by a membrane of the mucous kind; and, after making a few remarks on the ancient belief of the deleterious qualities of the menstrual fluid, he adds,

"It must be admitted, that this secretion is acrid occasionally, and will leave traces of its acrimony upon the parts over which it flows; but when this happens, it must be recollected that this discharge is in a deranged state, and no longer a pure menstruous evacuation. This occurs more frequently towards the decline of life, and especially if there be a tendency to cancer. It must, however, be recollected, that even in such instances, the general system is not contaminated in the commencement of this condition of the uterus; the acrimony of the discharge results from an altered action

of the vessels concerned in the process of elimination, and exposure to the air; and it is not until portions of this discharge are absorbed, or until the system at large sympathizes with their diseased parts, that any evidence of the uterine affection is betrayed by the skin, or other parts becoming diseased."

The two succeeding chapters, from p. 65 to p. 117, on deranged menstruation, being copied, with very little alteration, from the author's System of Midwifery, which has already been before the public more than two years, we do not think it necessary to analyze them here; and, therefore, pass to the examination of a few sections in chapter ninth, on diseases of pregnancy, which, so far as we know, are here published for the first time.

Dr. D. states, that, in his opinion, pregnancy is not necessarily a disease in itself; but that it frequently induces this condition in other organs of the body, by means of what he denominates a strong sympathetic feeling.

"As an arrangement of nature, the uterus, being occupied with the rudiments of a new being, cannot with propriety be said to be in a morbid condition; on the contrary, it is essential to the object of this condition, that it preserve almost inviolate its healthful integrity. For if it become diseased, in the strict meaning of the word, the intentions of this condition will almost to a certainty be prostrated. It therefore has decidedly the power of exciting other parts to diseased, or, at least, to deranged action, while it preserves itself in the most healthful state. Indeed, the healthful condition of this organ seems necessary to its power of calling other parts into sympathy, either morbid or salutary." "This is abundantly proved by the fact, that the process of gestation goes best on, as a general rule, where certain, or what are called the rational, signs of pregnancy are present, and even in full force; such as nausea, vomiting, salivation, heart-burn, swelling of the breasts, &c. &c. consequently proving it to be in a healthful condition."

In this, Dr. D. differs widely from Dr. Rush, who regarded pregnancy as an inflammatory state approaching to disease, and from the best Italian and French pathologists of the present day, who consider the uterus, during this state, to be in a state of inflammatory irritation. For our part, we must confess, that we are more and more inclined to adopt this view of the subject, as it is otherwise difficult to account for the attraction of blood to the uterus,—the growth of this organ,—the formation of the decidua, which is nothing more than coagulating lymph, and is formed in cases of

extra-uterine pregnancy; and also the inflammatory condition of the blood drawn in this state. Nor can we well understand how an organ, in its healthful state, can excite so many sympathetic derangements; and that too, as maintained by our author, in proportion as it approaches to a state of perfect health. This position seems to us to be contradicted by every phenomenon which is observed in the normal or abnormal condition of the system,—organs, in their quiescent state, exciting but few sympathies; whilst, on the contrary, they derange a number, and even all the organs of the body, when in a state of irritation. The uterus itself may serve to illustrate this, for we find many women enjoying good health, during the intervals of menstruation, who become very distressingly affected, so soon as the uterine periodical irritation has returned. In chronic, and even acute, affections of the uterus, and in some cases of amenorrhœa, many of the sympathetic disturbances which are enumerated as signs of pregnancy, are sometimes present; and surely no one will assert, that they are violent in proportion as the uterus approaches to a state of health. We think it may safely be affirmed, therefore, that the sympathetic affections noticed during pregnancy, are evidence, not of a healthy or normal condition, but of a state of irritation of the uterus;—an irritation, which, unless carried too far, is necessary for the regular performance of the new functions which the uterus is called upon to execute, as well as for its growth and regular supply of blood. We agree with our author, that these various sympathetic affections are intended to divert all evil from the uterus, in order that the great object of nature, (the propagation of the species,) should not be circumvented with too much facility; but we believe, that they do this, by revulsing irritation from the uterus, and not, as believed by him, by preventing plethora.

From these remarks, it will appear evident, that, in adducing the following, as the causes of the state of stimulation in which the system is kept during pregnancy, Dr. Dewees has overlooked the irritation of the uterine system during that state.

"*First.* There is the stimulus of distention constantly operating, from the first six weeks, to the full period of utero-gestation. This is most obvious in the first few months, and for this reason, that at this period, the uterus yields with more reluctance than at any subsequent period, either from its own specific density, or from the smallness, as well as feebleness, of the

distending cause, the ovum.* Hence, in the first few months of pregnancy, the sympathetic affections are more violent than in the after periods. *Secondly.* Joined to the stimulus of distention, is that disturbance, which is, and must be, consequent upon the changes of position, of all the abdominal viscera, which sometimes is very considerable. *Thirdly.* The constant, though not uniform, pressure upon the intestines, both above the fundus, and below its posterior and lateral portions; giving rise sometimes to many unpleasant symptoms, such as cramping pains, from the unequal distention of the bowels, constipation, diarrhœa, &c."

From this state of excitement, arises the danger of stimuli in pregnant women, and the want of success, generally encountered, in curing intermittent fevers in them with bark, unless the exhibition of this remedy has been preceded by ample depletion.

The following remarks, on the use of bleeding, purging, &c. in pregnant women, are entitled to great attention, as few physicians, in this or any other country, have had as much experience in such cases as Dr. DEWEES.

"There is much prejudice connected with the depletion of the pregnant woman. This is sometimes so great, as to render it extremely difficult to subdue their diseases. This prejudice, for so it truly is, is founded upon false views of the functions of the uterus, and the economy of the fœtus, during the period of utero-gestation. It is imagined, that for every ounce of blood the mother loses, the fœtus is deprived of a certain portion of it; consequently, that we should be very sparing of this fluid, that we may not deprive the fœtus of its due proportion of nourishment. On this account, the clamour of friends frequently arrests the lancet, when its aid is most essential to the welfare of the mother.

"There are few errors of greater magnitude, than the one just noticed; and, though it is based in error, yet it has, nevertheless, much concern with the free and unbiassed practice of medicine. It very often causes the young practitioner to abandon some of the best established principles in the practice of his art; namely, that women bear the loss of blood better when pregnant, than at any other period; and that all the acute diseases by which

* There is every reason to believe, that the uterus, and, therefore, its cavity, is not enlarged solely by the distending power of the ovum; as in cases of extra-uterine pregnancies, it has been known to be much larger than in the natural state, and to be lined with the decidua. Nor is it correct to assert, that the greater sufferings of the woman, in the early periods, depend on the stimulus of distention being greater at that time; as in some individuals, these sympathetic affections appear, before we have any proofs of the ovum having reached the uterine cavity.

they may be attended, require a more extensive use of the lancet." "We have known much mischief produced by the exercise of these mistaken views of the animal economy."

On the subject of purging, he remarks,

"The pregnant woman does not bear purging so well as the woman who is not so; or, rather, if this operation be carried very far, there is a risk of producing abortion, owing to the strong consent between the uterus and rectum. Hence, the occurrence sometimes of this accident from a profuse diarrhœa, or a violent dysentery. Some caution, then, is required, in treating the diseases of pregnant females by purging; for, if carried to a great extent, it may do mischief. But, let us be understood exactly on this head, lest we deprive females of the advantages of this remedy, in the acute forms of disease. We mean, that a pregnant woman would not bear, without the risk of abortion, as much purging as she could if she were not pregnant; yet, she bears it with advantage, when carried to a considerable extent, especially if tenesmus be not excited, either by the quality of the drug employed, or by the accidental severity of the operation of a medicine generally eligible. In a word, we believe that the pregnant woman will bear, without risk, any common or necessary degree of purging, unless she is prone to abortion.

"We suggest a caution in the choice of purgative medicines, rather than in the employment of this evacuation as a remedy; for in them, with the pregnant woman, there is a great choice. All such as act with great force upon the bowels should be avoided, as well as all such as are classed among the drastic purgatives, as scammony, gamboge, colocynth, aloes, &c.; because all these produce, during their operation, great irritation in the rectum, and excite frequently tenesmus. It is this peculiar irritation, which renders unsafe any cathartic that may produce it, no matter to what class of cathartics this may belong; for, if castor oil, magnesia, or any other mild medicine, were to produce this effect, it would be equally improper to employ it, as any of the drugs prescribed above."

On the subject of emetics, we find the following remarks:

"Emetics should be given sparingly to pregnant women; they are rarely eligible after the fifth month, and should only be considered as remedies of necessity. Towards the last months of pregnancy, their operation is oftentimes uncertain in properly or freely evacuating the stomach, as this organ can be very little aided in its efforts by the other powers concerned in this operation; and from the parieties of the abdomen being greatly upon the stretch, much pain is experienced in their contractions, during the efforts to vomit, followed sometimes by severe cramping pains. We have known much and permanent pain produced, by the exhibition of an emetic at the last period of utero-gestation; and from which the patient was not entirely relieved, until the termination of her labour."

Blisters, Dr. D. observes, are to be used with great caution with pregnant women; as, owing to the great excitability of their systems, they produce considerable pain, are not always followed by the desired degree of relief, and are much more apt to produce strangury, than at other times.

On the subject of the "febrile condition of the system during pregnancy," Dr. DEWEES enters somewhat at large, and shows, we believe conclusively, that the crust observed on the blood drawn in that state, does not differ from that noticed in inflammatory diseases. Like Dr. DENMAN, our author supposes, that this state of the arterial system and blood is intended to answer some important purpose to the child, and ventures an explanation of the manner in which this is effected; but, as this explanation is really, as he calls it himself, a "conjecture," and as it is founded on a theory respecting the nourishment of the fœtus, which, though ingenious, is very far from being proved to be correct, we shall not stop to examine it here, but pass to the treatment proposed by our experienced author, for the febrile condition.

"A few ounces of blood abstracted from the arm, a vegetable diet, and keeping the bowels open by any of the mild purgatives, will be found sufficient for the immediate removal of this state of the system. If acidity prevail, magnesia will be the best purgative we can employ; if there be no acidity, pills of rhubarb, castor oil, seidlitz powders, sulphate of magnesia, or flowers of sulphur, will be found best. All stimulating substances should be carefully avoided; every kind of liquor should be prohibited—water alone should be the drink."

"Errors in diet are almost constantly committed during pregnancy, than which few things are more mischievous. We have already adverted to the tendency there is to plethora, during this condition of the female; on this account, it cannot fail to be injurious to overcharge, or to over stimulate, the stomach. No one circumstance has contributed so certainly to fix this error, as the vulgar speculation upon this subject; namely, the necessity the female is under to prepare nourishment for two beings, at one and the same time; herself, and the child within her. It is, therefore, constantly recommended, to eat and drink heartily; and this she too often does, until the system is goaded on to fever; and sometimes, to more sudden and greater evils, as convulsions, or apoplexy."

On the subject of "inquietude and want of sleep," Dr. DEWEES remarks,

"We believe, that this inquietude arises from that peculiar irritability of the nervous system, which seems to constantly attend upon a *fulness* of the

system, rather than on a deficiency of blood. In proof of this, the pulse is always quickened and full in the evening, and during the night; and it is a true exacerbation, or febrile paroxysm, which spends itself by morning, and permits the patient to sleep at that time. Again, bleeding, purging, low diet, cool air, and cold water, are the best remedies for this complaint." "We never prescribe opium in any form, unless the necessity is very urgent, and when bleeding and the other remedies have failed; and when we do order it, it is always in small doses. We prefer the acetated tincture, or black drop, to any other form of opium; of this, we give ten drops only at first; and if it does not tranquillize in two hours, we direct five drops more; believing, if this quantity does not succeed, a larger quantity will not; we therefore never urge its use."

With the treatment here proposed for this complaint, no one, we believe, who has had to treat it, will feel disposed to be displeased; but we cannot say, we are perfectly prepared to admit the correctness of the theory upon which it is predicated. Thus, it is a subject of notoriety in pathology, that, unless the effect of local irritation, the irritability of the nervous system, or, rather, of the nervous centres, increases in proportion, not to the *fulness* of the blood-vessels, but to the debility of the system; and that *fulness* of the vessels never produces fever, independently of local irritation. If, therefore, in the cases before us, there are evening febrile paroxysms, they indicate plainly that some local intermittent irritation, involves sympathetically the heart and brain,—accelerating the pulse, and producing that state of erythismus of the nervous centres, which increases the irritability of the nerves, and gives rise to that inquietude and inability to sleep, characterizing the complaint,—a local irritation, which may co-exist with, and even be increased by, a fulness of the blood vessels; but which may be combined, as in a case now under our care, with a debilitated state of the system. This irritation may be seated in any part of the system; though, in the large majority of cases, it is located in the uterus,—proving, that this organ is not as passive during pregnancy, as is contended for by our author, and accounts sufficiently well for the buffy state of the blood during utero-gestation. This, we are aware, may be called by Dr. DEWEES mere theory; but it is a theory that will lead to the same practice as is recommended by him; and has this advantage over some "conjectures," with which many works abound, of being

more consonant with the received principles of physiology and pathology, and backed by the best authorities in medicine.

In an interesting chapter of twenty-six pages, on leucorrhœa, our author enters fully into the nature and treatment of this complaint; and we cannot help regretting, that our limits will compel us to restrict ourselves to a very few remarks and extracts. We believe, that Dr. DEWEES has devoted too much space to an examination of the various divisions and subdivisions, that have been made of this complaint by systematic writers;—divisions, which cannot be regarded as of much value in a practical point of view, and have varied according to the particular pathological and physiological notions of each writer on the subject.

Passing over the whole of this subject, as well as over an unnecessarily long refutation of some opinions of CULLEN's, respecting the vessels which furnish the mucosities of leucorrhœa,—opinions, which, we may venture to remark, no one now cares much about—we proceed to a subject more worthy of our attention; we mean, the treatment of leucorrhœa.

Regarding the disease, in his two first varieties, by direct and indirect irritation, to consist in an inflammation of the mucous membrane of the vagina, and sometimes of the uterus, &c. yielding a copious secretion of mucus, Dr. DEWEES proposes a plan of treatment, which is at first strictly antiphlogistic, and consists in the second stage, after the febrile and most acute symptoms have been removed, in the administration of the tincture of cantharides, until strangury is produced, (unless the disease is arrested before this symptom appear,) and in the use of astringent injections. He divides the idiopathic form of the disease, or that by direct irritation, into three stages, characterized by more or less severity, and manifested by some difference in the colour and consistence of the fluid secreted, and requiring some modification in the treatment. But as these modifications consist only in the degree of perseverance with which the plan above mentioned is to be continued, and in the extent to which it is to be pushed, according to the violence of the disease, we shall not enlarge upon the subject here, but refer those who are desirous of the details of Dr. D.'s precepts, to the book itself, in which they will find a great deal of useful matter. Dr. D. does not enlarge so much on the treatment of his second species—that from remote or indirect irri-

tation, as could have been wished. It is true, that in speaking of the seat of the disease, he states, that he does not allude to that variety of it which is symptomatic of some derangement of the proper substance of the uterus, or attendant on a prolapsus of this organ; intending to treat of them under their respective heads, and probably to allude, likewise, to the mode of treatment in such cases: but as he also includes under the same head, those instances of the disease that arise as a symptomatic effect of an irritated rectum, when subject to hæmorrhoids, or the seat of ascarides; of the irritation of the gums, as in early dentition; of the stomach, when dyspeptic; some of which affections are not treated of in the present volume, and yet may seem to modify the treatment of the leucorrhœa, and even contraindicate the use of the cantharides; we think the method of treatment in this species of the disease ought not to have been so entirely overlooked. Nor do we find any particular details relative to the treatment of the third species, or that by *habit;* except these few words, contained in a note to page 239. "It may be well to observe, that a strict antiphlogistic plan is constantly pursued, during the cure of either stage of this complaint, until we are assured the discharge is maintained by habit." What is to be done when this occurs, we are not distinctly told, unless the doctor regards this *variety* to consist in the chronic stage of either of his two varieties; and thinks he has fully answered his purpose, by marking the manner of treating this period of the complaint by his favourite remedy, the cantharides, (to the efficacy of which we can bear testimony,) and by astringent injections, which, he remarks, should never be used, until the discharge becomes more copious, but thinner.

We proceed now to say a few words on the treatment Dr. DEWEES proposes for carcinoma uteri.

"The first object," he remarks, "in the treatment of carcinoma uteri, is to prevent the ulceration from taking place; this is to be done by the reduction of the local inflammation, (which is an essential to the disease,) by such means as are best calculated to diminish the quantity of circulating blood, and to abate arterial action." "These ends will be found best answered by, 1st, blood-letting, both general and local; 2d, by purging; 3d, by an abstemious diet; 4th, by cleanliness; 5th, by rest."

Dr. D. recommends the first to be employed, and blood drawn

from the arm, when there is considerable arterial action, which, he remarks, is often the case. When this excitement is not so great, and especially if there be a severe throbbing pain above the sacrum, he prefers the local abstraction of blood by cups or leeches. Nor does he restrict the use of bleeding, in such cases, to individuals of a plethoric habit; having constantly found, that even in patients not enjoying this state of fulness of the blood vessels, when the pain was severe, the pulse tense and frequent, the skin hot, and sleep uncertain, the abstraction of a few ounces of blood could afford, not only considerable relief, but would place the system in a better condition for the use of narcotics. Dr. D. prefers local blood-letting, when it can conveniently be had recourse to; and thinks, that leeches, when applied to the vulva, are more efficacious than when applied to the back. He has found it necessary to have the local blood-letting repeated, sometimes every three or four weeks. From the result of the experience of some late French physicians, and from some trials of our own, we are inclined to believe, that the treatment of carcinoma uteri by local blood-letting, repeated oftener, however, than Dr. D. seems to have done, aided by moderate purging, by an abstemious diet, by cleanliness, and rest, is the most successful, and if persevered in steadily, and resorted to before the disease has progressed too far, will save the patient much suffering, and serve to dispense her from swallowing many poisons, regarded by some as specifics, and of which we are glad to find Dr. Dewees has made no mention.

We are compelled to omit Dr. Dewees' remarks on purging, diet, &c. and to refer the reader for much valuable matter, under these heads, to the volume itself. Passing over, also, the section on polypus of the uterus, which contains nothing remarkable; that on cauliflower excrescence of the same organ, which is in great part taken from Dr. Clarke; and the long chapter on uterine hæmorrhage, which, we believe, is now sufficiently known to the American reader, being here republished for the fifth time; we proceed to offer a short sketch of Dr. Dewees' views, respecting the nature and treatment of hysteritis.

This disease, as is remarked by Dr. Dewees, has almost always been confounded with puerperal fever, owing to the undefined

meaning attached to the latter term,—every disease attacking the puerperal woman being denominated a puerperal fever. Dr. Dewees, however, restricting this term, like many modern authors, to the peritoneal inflammation attacking women in childbed, treats separately of hysteritis, of which he makes two species; the one, simple, or pure; the other, combined with inflammation of the peritoneum.

The causes of this disease are, all "the violences to which this organ may be exposed, in the exercise of its functional powers, during the expulsion of the child; those to which extrinsic aid may expose it, when its own powers have been either insufficient or mistaken for this purpose; those which may arise from the artificial delivery of the placenta; or those which may act independently of either," as cold, some secret influence in the air, improper regimen, &c.

It generally attacks the woman within the first five or six days after delivery. This inflammation, Dr. Dewees thinks, can be distinguished from every other by the following signs:

"The woman complains of a pain at the lower part of the abdomen, which gradually increases, or can be easily augmented by pressure made immediately above the symphisis pubis. It is also increased by any motion which may disturb the repose of the uterus; as turning in bed, sitting up, passing of water, and going to stool." "If the fingers be made to press upon the uterus externally, it will be pretty readily distinguished, by its size being greater than usual for the period after delivery; its hardness, which is very resisting; and by its unusual tenderness." "The pain which the woman feels is constant, or it may be occasionally lancinating; but always greatest when the uterus contracts, and produces after-pains." "There is no swelling of the abdomen, in the commencement of this disease, unless it arise from the augmented size of the uterus itself; which is never so great in the commencement of the complaint, as to make it conspicuous. The abdomen does not participate, in the slightest degree, with the uterus, in simple hysteritis; hence, there is none of the tenderness which is witnessed in peritoneal inflammation, or puerperal fever."

There is a frequent desire to make water, attended with more or less pain; at other times, there is a retention of urine; showing that the urinary apparatus participates in the irritation. As in other cases of inflammation of vital organs, there are what have been denominated constitutional symptoms; that is to say, the heart, arteries, stomach, brain, &c. become involved in the irrita-

tion, and manifest their sufferings by the usual symptoms of fever, &c. The pulse in this case, as in other inflammations of parenchymatous organs, is full, strong, and hard, and rarely exceeds an hundred strokes in the minute. The lochia are generally suppressed; but Dr. D. very properly rejects the opinion of the older, and adopts that of the more modern writers, who maintain, that this suppression is an effect, and not a cause, of the disease. The mammæ, he also remarks, sympathize less with the uterus, when inflamed, than with the peritoneum under the same circumstances.

In the mixed hysteritis, to the symptoms above enumerated, are added some of those which manifest the extension of the inflammation to the peritoneum, and which we shall notice in speaking of puerperal fever. This complication is generally fatal.

For the treatment of this disease, our author recommends the antiphlogistic plan, pushed to the fullest extent. Of bleeding, he remarks, that it cannot be regulated otherwise than by its effects, its quantity being of a minor consideration, should the symptoms which created the necessity, continue to demand its repetition. Dr. Dewees recommends, also, the use of local blood-letting, as soon as the pulse is sufficiently reduced by the lancet; and selects for the application of leeches, the parts nearest to the fundus uteri, and also the vulva. "To co-operate with bleeding, purging must be instituted simultaneously with it," and kept up by suitable remedies throughout the whole course of the disease. Dr. Dewees does not approve of fomentations to the abdomen, in which he differs from the best authorities in medicine. Nor does he think blistering the abdomen very useful in this complaint. Of sudorifics, he remarks, that in the early stage of the complaint, they are altogether inadequate to the production of perspiration; and when it is on the decline, they are generally unnecessary. "We have thought them occasionally useful, where the system had yielded to previous treatment, and nothing but a little feverishness came on in the evening, accompanied by watchfulness and a dry skin." Dr. D. gives the preference to Dover's powder. He thinks opium of little use in this disease, "unless it be to relieve some sudden symptom, as severe and unexpected pain in the bowels, from flatulency, or other causes, when the fever is pretty well under command; to moderate unnecessarily severe purging, or hyper-

catharsis; or to give temporary comfort to an exhausted or irrecoverable patient. Indeed, if depletion has been ample, there is very little use in the opium."

The subject of the succeeding chapter, is puerperal fever—a disease, which has afforded more matter for dispute, as to its nature, seat, and treatment, than any other in the long catalogue of maladies to which the female subject is liable. Dr. DEWEES has very unnecessarily extended this chapter to ninety-two pages, whilst he could have said as much as it was really necessary to say on the subject, in twenty. Nor do we find much reason to congratulate him for order and clearness in the arrangement of his subject, or the taste he has displayed in the execution of his task; for many of the pathological positions he assumes; or for the choice of the authors he follows, or combats. Thus, in the present state of pathological science, it is hardly admissible, after asserting that puerperal fever is nothing more nor less than peritonitis, to enumerate among the characteristics of the disease, its being always attended by peritoneal inflammation (p. 366.); for, so far from the latter being the characteristic of the fever called puerperal fever, it is the fever itself; or, in other words, the group of symptoms called puerperal fever, which are the characteristic signs of the inflammation. Again, the doctor asserts that the fever is only the result of the local irritation; which no one now will dispute; but he adds, that this irritation is *occasioned* by the inflammation; an opinion which we maintain is the very reverse of the truth. As regards his arrangement, we will merely mention, that in treating of the history of the disease, he digresses widely from his subject, and combats, somewhat at large, Dr. JACKSON'S sentiments respecting the effects of stimuli in warding off the disease. In speaking of the *period of attack*, he opposes the opinion of Dr. CLARKE, respecting one of the *causes* of the disease; and notices, with some detail, Dr. GORDON'S and Mr. HEY'S method of shielding the patient from an attack. We are willing to admit, that all Dr. DEWEES' remarks on these several subjects, are extremely valuable; but they must be allowed to be out of place, and likely to involve the whole matter in confusion.

In the whole of this section, there is displayed an effort at pathological reasoning, which might have been saved by adopting the method pursued by many late French physicians, of detailing

a few cases, with dissections, and making reference to some of the best modern authors on the subject of peritoneal inflammation. In this way, Dr. D. might easily have shown, that the train of symptoms known under the name of puerperal, or low child-bed fever, by authors of the last century, was the result of peritoneal inflammation; and that this inflammation differed in nothing from that attacking women at other periods, or even the other sex, and caused by cold, or mechanical injury.

By this means, also, the author would have found sufficient reasons for not asserting, that there is something peculiar in the nature of this inflammation, other than what must arise from the difference in the nature of the membrane affected, and from some peculiarity of temperament in the patient; and for not giving as his reason for so believing, that the nature of the effused fluid is different from other fluids yielded by inflamed surfaces, though these surfaces may be covered by serous membranes—a fact, which, he thinks, is proved by the analysis of this fluid by Dr. George Pearson, to whom Dr. Clarke submitted some for examination. 2. That this inflammation always terminates in effusion, or suppuration, before death, and never, or but very rarely, in gangrene. By adopting the plan we have mentioned, Dr. Dewees would have found, that Dr. Roberts' remarks, respecting the identity of the fluid found after puerperal peritonitis, and after pleurisy—remarks which he himself quotes—are correct, and backed by the best modern authorities on the subject of serous inflammation; that the experiments of Schwilgue, who found the fluid effused in cases of puerperal fever, to present all the constituent parts of pus from serous membranes, are entitled to greater respect than those of Dr. Pearson, who regarded it as a substance *sui generis*; consequently, that there is no foundation for believing the inflammation to present something peculiar. Each tissue of the body, when inflamed, throws out fluids, which differ more or less from those thrown out by the other tissues of the same individual; and this simply owing to a difference in their organization. Some become gangrenous much sooner than others, from the effects of inflammation. With these truths before us, then, we cannot think well of arguments advanced to prove that the inflammation of a part is of a peculiar nature; and resting on no better foundation than the fact, that the product and termination of this inflamma-

mation are different from those noticed after the same morbid condition of other tissues.

Finally, by following this plan, the author would have saved himself the trouble of noticing and answering, lengthily, the opinions of authors, who might have been authoritative forty years ago, but who have certainly ceased to be so, since the researches of a BICHAT, a LAENNEC, a BROUSSAIS, a PEMBERTON, on peritoneal inflammation, and of a SCHWILGUE, a LEGOUAIS, a CHAUSSIER, not to mention many late English writers, on the same inflammation when attacking the puerperal woman.

Omitting here an enumeration of the symptoms of this disease, which are the same as those of peritonitis under any other circumstances,—adding, however, a few depending on the actual condition of the patient, we pass to the treatment. On this subject, much difference of opinion existed a few years ago; for, whilst some, influenced by the appearances they discovered on dissection, advocated the antiphlogistic plan; others, deceived by the symptoms of the last stage, gave to the disease the name of low fever of child-bed, and either condemning altogether antiphlogistics, or using them very sparingly in the early stage, had soon recourse to bark, wine, and other remedies, supposed to possess anti-putrid virtues. Of the comparative success of these two plans, it is unnecessary to speak here; as experience, in almost every country, has shown in the most conclusive manner, that the treatment by powerful antiphlogistic means, is the only one which promises any chance of success. Such being the case, and few physicians advocating now the idea of putridity in this disease, or recommending bark for its cure, we do not think it necessary to follow our author in his arguments, to prove that those who bleed copiously lose fewer patients, than the supporters of a stimulating practice; and we shall only extract from this section a few remarks, which we regard of the greatest practical value:

"We are persuaded, there are few errors in practice greater than that which is founded on the belief, that when a *disease will not bear with profit depletion, that it then absolutely requires the opposite treatment;* and we are also persuaded, it has been the death of thousands." "The supposed tendency to typhus, in fevers of every description, when the patient has become weak, and especially if the tongue has become brown and dry, has

led, unhappily, to the use of tonic and stimulating remedies, in the practice of almost every body;* but were the results of such treatment faithfully recorded, we are convinced, there would be little evidence in its favour—indeed, so confident are we on this subject, that we never fail to consider the *cures* of such a state of fever by this method, but as *escapes*."

Bleeding being admitted, therefore, to be the principal remedy in the treatment of peritonitis puerperalis, it would next be a matter of much importance, to know how far it can be carried with any prospect of success. The pulse, which is in general so sure a guide in inflammations of other parts, ceases to be so in peritonitis, being sometimes small and depressed, whilst the other symptoms, as pain, &c. seem imperiously to call for the lancet. Dr. DEWEES remarks, that Dr. ARMSTRONG makes but two stages of this disease; but that, in his opinion, a third is essential to the well understanding of the complaint. This stage, he thinks, is intermediate, between the cessation of the inflammation, and the period of effusion; and is precisely the period at which blood-letting can do no good, and stimulants must destroy. It must be evident, that in a matter of so much moment, this distinction, if well founded, would be of the greatest practical utility, as the physician would know precisely how far to carry the lancet, and when to abstain from it. But our disappointment is very great, when we learn, a little further on, that

"It would appear, that the first, or inflammatory, stage of puerperal fever, the stage in which bleeding has been so eminently successful, has no *discovered character*, by which it may be distinguished from the second, in which this operation is forbidden after the lapse of a few hours." "The rules which are to govern the loss of blood in this complaint, are, therefore, necessarily reduced to rather uncertain and narrow limits; and are more dependent upon contingencies, than fixed principles."

Uncertain, however, as are the signs by which we are to be guided in the use of the lancet, in the disease before us, we think our author is perfectly correct, in stating that we should bleed as early as we possibly can, and draw at that time as much blood as

* This remark we think too exclusive, and would have been more applicable to the state of practice twenty years ago, than now. Undoubtedly, there are few physicians in this country, who stimulate simply for a brown and dry tongue, and muscular debility; and in France, we all know, that the practice is generally reprobated in the most unqualified terms.

the system will bear. To this he adds, that the bleeding should be repeated *pro re nata;* but as a pro re nata cannot be regarded as any definite direction for a young practitioner, we will substitute the following, (which Dr. DEWEES himself gives somewhere else,) that we should continue to extract blood—generally at first, and by means of leeches afterwards, so long as the pain remains severe, and symptoms of direct prostration do not make their appearance,—whatever be, at the commencement of the attack, the state of the pulse. In regard to the quantity of blood to be drawn at each bleeding, although some precise number of ounces has been designated by some English writers, we believe, with Dr. DEWEES, that few physicians in this country are guided in their use of the lancet, in severe diseases, by such rules,—judging, as they do, of the quantity necessary, not by weight or measurement, but by *effects.*

"As regards our own practice in such cases," Dr. D. remarks, "we have always abstracted as much as the system would bear; that is, until the pulse was changed, pain abated, fever diminished, and there was a disposition to syncope. These alterations would take place sometimes from the loss of a smaller, and sometimes a larger quantity of blood; but until they did, we could not flatter ourselves we had *strangled* the disease; and this we always attempted, did it require only twenty ounces, or did it demand forty." "In constitutions wont to faint, from the loss of a small quantity of blood, we cannot always get at one bleeding the necessary quantity; the operation is therefore to be repeated, so soon as the system re-acts with decided force, unless all the expected relief is obtained by what has already been done. We do not wait for the lapse of any certain number of hours; for we are persuaded, in doing so, we permit the disease to gain ground: we should, therefore, draw it as quickly as the state of re-action will permit, if the symptoms continue." "Our rule hitherto has been, when the first bleeding, which we always make a very liberal one, if called to the disease early, does not abate the severity of the symptoms in three or four hours, to repeat it without hesitation; but not to the extent of the first, as evidences of its influence manifest themselves before an equal quantity is drawn. Nor do we limit it to this single repetition; for if the disease be not abated in severity, we know of no other general remedy that has the slightest control over it."

As we have already said, leeches should be employed in large numbers, and applied to the abdomen, anus, or vulva. Purging actively, from the commencement of the attack, and continued through the whole course of the disease, is recommended by the

best English authorities on the subject of the disease, and is regarded as of indispensable necessity by our author, particularly in the first and most active stage. He recommends eight or ten grains of calomel to begin with, followed, in an hour or two, by repeated doses of magnesia and epsom salts. Dr. DEWEES seems disposed to think, that the croton oil might be resorted to, with great benefit, in this complaint. To emetics, notwithstanding the authority of Mr. DOULCET, Dr. ARMSTRONG, and others, he objects, as they appear to him "to be of doubtful efficacy as principal remedies, and limited in their usefulness as auxiliaries."

Of blisters, he says,

"Our own opinion is, that they are less useful in this inflammation than in any other: we have used them formerly, but have abandoned them altogether of late years, because they are always extremely inconvenient, where the patient is to be so frequently disturbed by the operation of purgative medicine, and never, as far as we have seen, decidedly useful. If they are employed, it should be after the first or second liberal bleeding, and after the bowels have been well purged."

Dr. DEWEES ought to have added, that blisters should never be applied to the abdomen, because they very often tend to increase the inflammation,—a circumstance pointed out by BICHAT and BROUSSAIS, and which we have ourselves in several instances been witness to. When employed, after sufficient bleeding and leeching, on the inner parts of the thigh, they have sometimes appeared to hasten the cure, in ordinary cases of peritonitis; and may, therefore, be thought likely to produce the same effect in the present disease.

Dr. DEWEES disapproves of fomentations, and limits the internal use of turpentine to the second stage, which he denominates, very improperly, the gangrenous. This stage consists in nothing but the termination of the inflammation, and commencement of that of prostration; and will admit, according to our author, neither of depletion, nor stimulation. It would be, agreeably to us, the proper period for revulsion, and Dr. DEWEES thinks that the practitioner should continue the depletion from the bowels. We do not hesitate, however, to state, that few practitioners will be always able to make such nice distinctions of the stages of puerperal fever; but will experience, in attempting it, a difficulty, which we have already noticed the author himself seems to recognize,—

that Dr. ARMSTRONG's division of the disease into two stages, is as good as any, practically speaking, since all that need be said on the subject of stimuli, is, that they should not be resorted to too early, even after we find that depletion cannot be pushed any further. Besides, we believe, that few patients recover from this disease, when they have arrived at that period at which they may be thought to require stimulants; and that when they do, they would probably have got well as soon without them. Hence, we need not be in a great hurry about using such means; and this advice, to avoid precipitancy in the present uncertain state about the real signs indicating the second, or gangrenous stage, at which bleeding is no longer useful, and stimulants dangerous, is the only one that can well be given to the young practitioner.

Dr. DEWEES is no great admirer of opium, in the present disease; and says, that although he employed it where the patient suffered from uterine efforts, or after-pains, he is not sure it did not retard, instead of promoting, the cure.

Passing over the chapter on milk-abscess, we are next to notice Dr. DEWEES' opinions relative to the nature and treatment of Hysteria. We must confess, that in his very long chapter on this subject, occupying sixty pages, we again find much diffusion, and the same want of order in the arrangement of the matter, which characterizes the chapter on puerperal fever. We are sorry also to find, that he has not availed himself of the labours of many of the best modern writers on this disease, as GEORGET, VILLERMAY, &c.; and confined his researches to WHYTT and SYDENHAM, who, on the subject of the symptoms, may be consulted with some advantage, but can no longer be regarded as authoritative in respect to the pathology of the disease.

Dr. DEWEES thinks, with WILLIS, CHARLES LEPOIS, and, more recently, GEORGET, that hysteria is located in the brain, and not in the uterus; and to a certain extent, this theory (if to the brain we add the upper part of the spinal marrow) is correct; for, in the present state of our knowledge, we are not justified in admitting the possibility of violent or general *nervous* symptoms, without the existence of a primary or sympathetic irritation of the cephalic and spinal organs. But if it be meant, that this irritation of the brain is never the result of irritation in other parts of the body, and often in the uterine system, then we maintain,

that this view of the pathology of the disease is incorrect, and contradicted by facts. Indeed, Dr. DEWEES himself admits, "that a certain condition of the nerves of the uterus, like any other portion of the body, may give rise to that combination of symptoms termed hysteria;" and in another part of the work, he says, "I have repeatedly seen hysteria, in its most aggravated forms, attend upon each return of the menses in very young women; but," he adds, "in all such cases, the particular state of the uterus, at this period, served but as an exciting cause to this affection; for hysteria could be excited in these individuals, at other times than at the menstruous periods, by any cause usually capable of producing it." Now, we believe, that these concessions are sufficient to prove, that hysteria is not *always* dependent on an idiopathic irritation of the brain; but arises occasionally from irritation of the uterus, transmitted secondarily to the brain, and reflected by this latter to other parts of the body. No one, at least of any authority in pathology, has ever maintained, that the irritation producing hysteria was located in the uterus, to the exclusion of any cephalic irritation; or that there was a "necessary connexion between any condition whatever of the uterus and hysteria, that is, as genuine cause and effect:" in other words, "that every derangement of function, or even lesion of this organ, (uterus,) will produce hysteria." To have maintained this, would have been to maintain an absurdity, contradicted by the result of daily observation; and all those who have advocated the opinion, that an uterine irritation will give rise to the disease, are yet to be proved so much destitute of common sense, as such an assertion would have indicated. All that has been, and still is, maintained, is, that although the irritation giving rise to the symptoms of hysteria is located in the brain, and may be produced by any cause acting directly upon that organ; still, it is often excited sympathetically by an irritation located in the uterine system, or occasionally in another part of the body.

As we have not sufficient space left, to enlarge upon the subject of hysteria, we refer the reader, for much valuable matter on the symptoms and causes of the disease, to the volume itself, and content ourselves with a few extracts on the treatment.

"There are few errors more common in practice, than that of treating *nervous symptoms* independently of the circulating system; and hence, the too often want of success, of usually proper remedies, when administered

without this regard. The belief, that blood-letting, or any other mode of depleting, is injurious in nervous diseases, has very often prevented the influence of the best remedies; and, consequently, has caused a disease to be protracted and obstinate, which would have yielded almost instantly to the common agents, had their administration been preceded by the loss of a few ounces of blood, or even perhaps by a brisk cathartic." "However ill depletion may agree with nervous constitutions, under a want of excitement in the vascular system, it is, nevertheless, indispensable, when hysterical symptoms are accompanied by an exalted arterial action; and it should, therefore, always be premised. Whoever expects to be successful, in the treatment of nervous patients, without paying attention to the state of the pulse, will find himself constantly disappointed; and the application of such medicines as are known to exert an influence upon the nervous system, will be sure to be unsuccessful, if not mischievous."

The rest of the treatment consists in the exhibition of the various antispasmodic and narcotic medicines, either by the stomach, or in form of injection. For the manner of using them, and for the prophylaxis of the complaint, we again refer to the book itself, and hasten to bring this already long article to a close.

Although we have, in the course of this review, taken the liberty to differ from our author, on some pathological, and other points of less consequence, all its readers will unite with us in welcoming the present volume, as a work of real practical value, more especially to young practitioners. We cannot abstain from expressing our regret, however, that the unnecessary length of many of the chapters has so enlarged the volume, as to compel Dr. Dewees to leave unnoticed, some of the most important diseases to which women are subject,—diseases, upon the treatment of which, we know, he could have offered many valuable remarks. Thus, what could have been more interesting to the less experienced members of the profession, than Dr. D.'s views respecting the proper method of treating cancer of the mammæ, dropsy and tympanitis of the uterus, nymphomania, phlegmasia dolens, &c. By not omitting these diseases, he would have conferred a great favour on the profession, and rendered his work much more complete than it is at present. This omission, however, as well as much diffusion in the composition, many unnecessarily long pathological disquisitions, and inelegancies in the style, may so easily be obviated and amended in a future edition, that we hope, from the interest we take in Dr. D.'s reputation as an author, that the rapid sale of the present edition will soon enable him to make the necessary alterations in the second.

ARTICLE IX.—*A Treatise on Physiology applied to Pathology.* By F. J. V. BROUSSAIS, M. D., &c. &c. Translated from the French, by JOHN BELL, M. D., &c. and R. LA ROCHE, M. D., &c. Philadelphia: H. C. Carey and I. Lea. 1826. pp. 560. 8vo.

IT is not our intention at this time to descant on the importance of correct physiology, whether for the guidance of the student in his reading, or of the physician in his practice. There is, we believe, but one opinion now held as to the utility of a knowledge of this branch of medical science, whatever discrepancies of sentiment may prevail respecting the most efficient means of teaching it. For ourselves, we are disposed to lay more stress than is usually done on the physiology of observation, not as opposed to, but corrective and confirmatory of the physiology of experiment. In other words, we conceive that course the safest which, while it demands the exercise of our senses, and a rigorous attention, calls, at the same time, on our reasoning faculties, for arranging, combining, and forming deductions from the apparent phenomena. It is by such means that we may obtain a competent notion of the function of the different external organs, for example, and even arrive at some very satisfactory conclusions from the physiological signs exhibited by the internal viscera. Thus, by noting carefully the relations between the stimulus of light, and the eye on which it strikes, we may discover numerous modifications in the state of this latter, and deduce some laws of vision. So, likewise, though the viscus be not presented to our senses, we may, by watching the effects of the stimulation of ingesta on the stomach, become apprized of the characteristic phenomena of digestion. Unless physiology be studied in this way, the experiments of the vivisectors, and the labours of the anatomists, will, we fear, be little else than *rudis indigestaque moles*, without form or beauty, and more calculated to perplex than enlighten, to bewilder than instruct. The observation of the signs furnished by the various organs in their physiological condition, that is, during their healthy functional rhythm, when operated on by the various agents of hygeine, is the necessary and indispensable preliminary to a knowledge of the meaning, and consequently, value of the signs exhibited by these same organs in their morbid or pathological state,

and when subjected to agents hurtful in their excess, or poisonous in their own nature.

We would say then, unhesitatingly, with the celebrated BARTHEZ, that a system of physiology, which does not furnish us with the means of analysing and classifying pathological facts, and from which we cannot deduce, *à priori*, precepts of medical practice, absolutely similar to those drawn from experience, is merely a frivolous amusement, unworthy of any well informed physician. The great BICHAT was well aware of the intimate alliance which naturally exists between physiology and pathology, and even laid the foundation on which, as a common basis, both are, we hope, destined immutably to rest. We, of course, allude to his General Anatomy, in which the difference of function and varieties in the symptoms of diseased organs, are clearly and methodically shown to depend on certain primary conditions and peculiarities of organization, which he expressed by the term tissues. These are to the human body what the elements are in chemical compounds. Encouraged by his first success, BICHAT conceived the vast project of forming a complete system of medicine, divested of hypothesis, and based on anatomy, the study of the functions in a state of health and a state of disease, the difference of tissues, the knowledge of the sympathies which preserve them in relation with each other, the observation of the effects, local and general, produced by the various modifiers applied to the organs; and, finally, on the results of autopsic examinations. But his premature death, in putting a stop to his own brilliant career, seemed also to be the signal for a cessation from practical inquiries in physiology, which became once more an abstract description of the functions of the organized body, and a study entirely diverging from that of pathology. None of his successors up to the period when BROUSSAIS commenced teaching, indicated the mode of transition of the organic phenomena of the normal to those of the abnormal state.—Vide *Archives Gen. de Médécine*, tom. I.

In the work before us, Professor BROUSSAIS presents the medical world with a system of physiology applied to pathology; in which we are able to gather data whereon to found a rational and successful therapeutical treatment. It is the attempt which BICHAT purposed making, and even though it should not come up

to our most sanguine expectations, we are bound to receive it with indulgence, and if found worthy, hail it with joy, as the harbinger of a bright day for philosophical medicine. Some idea may be formed of our author's plan, by the following extract from the first chapter.

"It is not my intention, then, says he, to present here a history of the functions viewed abstractedly; but rather to give the history of the physical life of man. Our object is to know the appearances that the animal matter of which he is composed assumes—to discover the organs that are formed from it—the order in which these organs are presented to the action of external bodies—the internal changes that are brought about, when those bodies we denominated modifiers (*modificateurs*) are placed in connexion with the organs—the manner in which organs primarily modified, modify others; and, if these latter operate on a third series, to ascertain the nature of this action, and when it will cease." p. 12, 13.

In the second chapter, under the head of *the composition of the human body*, we find the materials divided into

"1. The fixed animal matter, constituting the texture of the organs; 2. into the moveable animal matter, or the fluids.

"Gelatine, albumen, and fibrine, are the principal forms of fixed animal matter. They exist in various proportions in the different organs or apparatuses. They assume in the greater portion of the body the form of lines or filaments, more or less distinct from each other, and to which the name of *fibres* is applied."

The terms *organ*, *apparatus*, and *organic system*, are next explained, and the composition of the several parts of which they are formed is given. The brain and nerves consist almost entirely of albumen, the muscles of fibrine, and the cellular and serous tissues, tendons, and vessels, mostly of gelatine, which is also the basis of the osseous structure.

"None of the parenchymatous viscera and secretory glands are composed exclusively of one of the forms of animal matter. All, in fact, being furnished with blood and lymphatic vessels, excretory ducts, nerves, and cellular tissues; many of them possessing, besides these tissues, a serous, muscular, and mucous membrane, it is evident that the three principal forms of this matter must necessarily be found in them."

These three forms predominate likewise in the fluids, or, in other words, in the free and circulating animal matter, known under the name of *blood*. With these are also found various saline substances, and a red colouring matter, especially associated with fibrine.

In the third chapter, the author treats of *the vital properties of the tissues; vital power; vital laws.* He thinks that

"The tissues are endowed with only one apparent property, which manifests itself by the condensation of the animal matter, at the moment this latter is placed in relation with an external body. If this property be examined in each fibre in particular, it is easily discovered to consist in a simple shortening. Physiologists have called it *contractility.*"

This exists in different proportions in the various forms of animal matter. Fibrine possesses it in the most eminent degree, and contractility may be said to be inherent in this arrangement of matter. Next to the fibrine, gelatine possesses the greatest share of contractility, as is seen in the cellular and laminated tissues.

"Of all the forms of animal matter, albumen is that endowed with the least degree of contractility; nevertheless, in a great number of instances, it is possible to show that it possesses some."

It will be seen that BROUSSAIS refers to contractility all those movements of condensation or retraction, which some other physiologists have considered as the effect of the mere elasticity of the parts, which, when the distending power is withdrawn, have a natural tendency to condense. We apprehend that physiology will gain by admitting the phenomena to depend on an unit property, contractility, which is modified by tissues; being most energetic in its display in the muscle, and very faint in the nerves. We may, also, join our author in opinion, that the words *animal contractility*, and *sensible organic contractility*, do not express different properties; but can only serve, in the actual state of the science, to represent two circumstances, under which a property that is invariably the same, is manifested.

Sensibility is not regarded by BROUSSAIS as a vital property, common to the living fibre with contractility.

"For, says he, if the sensibility of the fibre be rendered evident only by its contraction, when we say that the fibre is sensible, we imply that it has contracted."

In a note to page 293, he censures the division of sensibility by BICHAT, into animal or perceived, and organic and not perceived, and adds,

"The words *organic sensibility* analysed, express the following fact: *the fibre of an organized being has contracted, by having been touched by a foreign body.* The words *animal sensibility* express this other fact: *the*

animal has experienced pleasure or pain. Now tell me, I beseech you, what there is in common in these two facts? The first is a phenomenon entirely material; the second is purely intellectual. For the first, we require but a piece of organized matter; for the second, we want an animal full of life, having a cerebral centre, and being in a waking state."

Sensibility, then, according to our author, is to be regarded

"As one of the results of the exercise of our functions—a result immaterial and incomprehensible in its nature, accompanied in all instances, with an exaltation of contractility, but which is not inseparable from it."

The *vital power* is described as

"That which presides over the formation, development, and preservation of the body;" and "that which accomplishes the assimilation of nutritive substances—extracts from them gelatine, albumen, and fibrine—regulates the form, consistence, volume, and duration of our organs, and re-establishes them in conditions requisite for the state of life and health, whenever, in consequence of the action of a morbid cause, they have deviated from these conditions."

This vital power, or force, exists anteriorly to the properties, or rather anteriorly to the fundamental property of the tissues, which, as we have seen above, is contractility. We are entirely ignorant of the essence of this power, for it is a first cause. The first immaterial invisible instrument of the vital power—the one of which we are made acquainted only by the exercise of our reasoning faculties—finally, that by means of which the vital power creates, is by Broussais called *vital chemistry.*

"The *vital laws* consist in a certain number of general phenomena, common to all the tissues, and which are discovered with so much constancy and regularity in all animals, that we are led to regard them as laws inseparably connected with the state of life. They are in some sort general functions, or facts constituting a part of the great function which is life itself." p. 24.

Our space will not allow of our specifying these laws in detail. They are twenty-two in number. Contractility is modified, or made to deviate from its actual mode in a greater or less degree, by all external bodies applied to the animal economy; and each modifying agent produces a deviation peculiar to itself.

When the organic movements of contractility are accelerated in a portion of the living tissue, the fluids are attracted towards it; from this has arisen the axiom *ubi stimulus, ibi fluxus.*

Vital erections are the result of increased organic movements of

contractility, and of the attraction of fluids to the part producing increase of density and volume. These vital erections, when they have attained a certain degree of intensity, are denominated *irritation*, *super-irritation*, or *super-excitement*.

In all vital erections there is an increase in the phenomena of vital chemistry; as for example, of temperature, of secretion, when the part is endowed with this property, and of nutrition.

Contractility and vital chemistry are again declared by our author to be the fundamental phenomena of the animal economy; and whenever they become more apparent in one part than in another, this local increase of their intensity receives the name of *vital erection*.

Whenever vital erections, irritations, excitations, and super-excitements, are developed in any part of the system, they cannot attain a certain degree of intensity without being transmitted to other parts. This transmission will be prompt according as the part abounds in blood vessels and nerves.

The transmission of vital erections, or of irritations, is effected through the medium of the nervous tissue, which is specially destined to that use.

The transmitted is of the same nature with the primary irritation.

Vital reaction depends on the existence of a law, in virtue of which the power presiding over life reacts against debilitating causes.

Caloric is the first and principal excitant of vitality; it is this agent that gives to the germ the faculty of appropriating to itself nutritive materials, and employing them for its development.

The causes of the diminution of the vital phenomena, are either positive or negative; among the latter of which, is cold.

Among the other causes of the diminution of the vital phenomena, we must place the subtraction of nutritive materials, as well as of the fluids, and of all the agents necessary for the exercise of the functions.

When the reaction of the vital power against debilitating causes cannot succeed in re-establishing vigour in the debilitated part, it is directed to other parts, and produces in these, notwithstanding the general diminution of the quantum of strength and of vitality, a super-excitement.

The positive agents that occasion the diminution of the phenomena of life, are much less known than the negative. They have been denominated by a particular sect of physicians, *contra-stimulants*, but they are less numerous than those physicians imagine.

The physical laws are modified in the living body by those of vitality—but they become active whenever the latter are enfeebled.

Attraction is always active in the living body, though restrained and opposed by contractility.

Electricity and galvanism manifest upon the animal body exciting effects, that are observed primarily in the nervous system, and secondarily in the tissues to which these nerves are distributed.

The excitement of contractility, produced by galvanism and electricity, does not fail, when intense and often repeated, to exhaust this property: under such circumstances, the body is languid—the power of attraction predominates over that of vitality, and in general nearly overpowers the vital chemistry.

The above is an index of the vital laws, without the commentaries and explanations which the author gives with each of them.

In *Chapter fourth* we have the division of the functions into those of relation, connecting us with external bodies, and those contributing to the maintenance and preservation of the individual, without the intervention of any external agency.

A summary view is then taken of relations. Here the author begins the development of his favourite position, that the impressions on the surfaces of relation, (the senses,) and the effect they produce on the brain or mind, are modified by the state of the internal viscera at the time. Thus,

"An aliment is presented to the sense of sight, hearing, or smell; if the stomach be in want of it, the perception is agreeable, and the desire of appropriating the aliment is developed with energy. If, on the contrary, the stomach be full or diseased, the perception is disagreeable; the aliment inspires a sensation of disgust, and the centre of perception determines, or tends to determine, movements proper for removing it.

"It is very certain, therefore, that the centre of perception judges of the impressions of external bodies only, from their relations with the viscera, which these impressions can interest."

Chapter fifth contains an examination of the external surfaces of relation, or *of the external senses.* In speaking of the skin, we are told that the phenomena of relation, attached to its tactile functions, are of three species: those of the first relate to the intellect—those of the second to instinct—and finally, those of the third are manifested in the distribution of the fluids, and in the disorder of the organs charged with the performance of the various secretions.

The intimate connexion between the function of the skin and the state of the digestive viscera, is shown in the circumstance of a person attacked with gastritis, feeling indeed the sensation from a titillating body, but he is neither inclined to laugh, nor to struggle to avoid it. Remove the gastric irritation by leeches to the epigastrium, and he immediately becomes ticklish as before.

The account of each sense is preceded by an anatomical description of the organ, and followed by an inquiry into the manner in which its phenomena degenerate into disease.

Chapter sixth is taken up with an *examination of the Encephalon and its spinal prolongation.* Our author adopts, with slight deviations, the anatomical exposition of these parts as furnished by GALL and SPURZHEIM.

The centre of perceptions and volitions is declared to be at the point of insertion of the eighth pair of nerves, for here the want of respiration, transmitted from the internal pulmonary lining, is felt, and from this point emanates the volition determining the action of the respiratory muscles.

Chapter seventh is on the *Sensations, Instinct,* and the *Operations of Intellect.* BROUSSAIS joins GALL in opinion, that there exist intra-cerebral nervous apparatuses, appropriated to a certain order of ideas; but he does not think that the brain acts independently of the other viscera. He goes on to say,

"Animals possess invariably the *cerebral organs,* (to conform myself to the language of this author,*) which preside over the prehension of aliments—the acts relative to generation, such as the seeking after a female or male, copulation, construction of the nest, incubation, the action necessary for seeking nourishment for their young, depositing their eggs in a certain place, fecundating those of their females, protecting and defending their young, disputing for the enjoyment of a female, &c. Wherefore, then, do

* GALL.

not these animals constantly perform these acts? Because the condition of the viscera, which solicits them from the brain, is not constantly the same. Whenever the stomach is full, or diseased, the acts requisite for seeking and seizing aliment, cease."

We should be doing the greatest injustice to the author, were we to attempt to give, by means of extracts, a correct idea of the profound thoughts and forcible analogies and illustrations, contained in this chapter. The phenomena of instinct, and the operations of intellect, are treated of in a masterly, though it must be acknowledged not always in the most luminous, manner. It is enough to say, however, that here, as throughout the entire work, the reader is required to think attentively, to analyse and only draw inferences after much labour. The construction of the sentences is awkward, the style has little to captivate, (this ought to be known in justice to the translators,) and the arrangement of topics is not always the most logical; but in despite of these blemishes, which are, perhaps, most evident in the portion of the work now under review, there is an originality, an energy of reasoning, and compass of thought, which cannot fail to finally win over, and permanently retain, the esteem and conviction of the attentive student.

Chapter ninth consists of corollaries *on the Intellectual Operations and on the Passions.*

The following chapter, numbered by mistake the same, contains an exposition *of the manner in which the exercise of the Intellect, the Affective Movements, and the Passions become causes of disease.* We are told, that each passion exercises a morbid influence over certain organs, though it would seem that the digestive apparatus is the greatest sufferer. As illustrative of our author's manner of viewing these subjects, and as conveying at the same time a good moral lesson, we shall repeat what he says of the effects of anger.

"The sensation which gives the first signal of the explosion of anger, consists of an acute pain, referred to the epigastric centre; indeed it is so certain that it exists in this region, that vomiting of blood—excessive secretion of bile—the sudden absorption of this latter, which produces jaundice a few moments after, and violent gastritis, are often its consequence. That these phenomena are produced by the direct influence of the brain, through the agency of the nerves, does not change the question before us; for it is not the less certain, that the epigastric irritation forms a part of the

passion denominated *anger*, and that the principal seat of this irritation is in the stomach and its appendages. Besides, experience teaches us, that when primitive, this irritation directs the centre of perception towards the ideas of anger. This passion, when physiologically considered, is primarily a simultaneous irritation of the brain and epigastric centre; hence, the vital action of the brain is often changed, in the most violent paroxysms of anger, into hæmorrhage or inflammation. From this arise attacks of palsy, apoplexy, and phrenzy, which often resist the best directed efforts of the art." p. 193.

"The association of the heart with the head and stomach, forces it to participate in the irritation which they experience in anger; but it will not be constricted, as in the painful passions without re-action; or if it is so, it will only be during a short space of time. It will soon become turgescent, blood will be attracted with force into its tissue, and it will even, perhaps, become predisposed to hypertrophy. If it be already debilitated and enlarged, in consequence of an aneurismatic state, some of its cavities may even be ruptured. The aorta will not be free from all danger; and the lungs, also, becoming suddenly engorged, may perhaps be ruptured, or become inflamed. I have seen hæmoptysis, and violent pneumonia, result solely from this cause. The muscles, agitated by a too precipitate innervation, may remain in a tetanic state, or preserve ever after a convulsive and distressing mobility.

"Such are the consequences of anger, considered as an acute passion, and whatever may have been the painful one, against which it has served as a re-action. If we examine it in its chronic state, we find that its effects are less terrible, though still very alarming. The habit of impatience keeps up gastritis, and annuls all the effects of remedies and of regimen; it prepares the way to, and determines, attacks of apoplexy; it occasions the return of epileptic, hysterical, and gouty paroxysms; it brings on, with redoubled violence, habitual convulsions and tremblings; and excites on the skin the most rapid inflammatory congestions. An elderly man was seized with a violent fit of anger, in consequence of a visit from some foreign soldiers, in 1815. He was suddenly affected with a large erysipelas on the right lumbar region, which became gangrenous, and occasioned an extensive slough. It must be also borne in mind, that all the violent passions have the property of bringing on suddenly herpetic diseases, more or less inflammatory, and the cure of which is sometimes very difficult to accomplish.

"Anger is one of those passions, that act with greatest energy on the various points of acute or chronic inflammation; hence, surgeons dread its influence on all sorts of wounds. If there exist a painful part, either internal or external, or if this part be merely more irritable than the rest of the system, anger will excite in it an increase of sensibility. In some individuals, it will occasion the return of sick head-ache; in others, it will re-excite the

sensibility of joints that have suffered from rheumatism and gout, that is to say, that have been inflamed; in a word, this passion occasions, in the most uniform and general manner, the exaltation of contractility and sensibility, which demonstrates, in the most evident way, its expansibly perturbating property." p. 194, 5.

To our minds, the above conveys a more forcible moral lesson, than the most eloquent recommendation and philosophical enforcements of the charm of equability of temper, or proper resignation, under the various annoyances and vexations to which man is heir.

In *Chapter tenth*, we find an account of *the Muscular Apparatus of Relation, and its dependencies*, terminated by a section, in which an inquiry is instituted, as to *the manner in which the exercise of the muscles may occasion, or become, cause of disease.*

"The muscles are all under the immediate dependence of the brain; but they must be divided into *cephalic*, which, in the natural state, only obey the stimulus of the brain, with the consent of the will; and into *cephalo-splanchnic*, which obey the viscera through the intermediate agency of the brain, in spite of the will; and also obey this latter, but only when the viscera are not in want of their assistance. The cephalo-splanchnic muscles never act in obedience to the will, unless the viscera, with which they are associated, be modified.

"Muscular action becomes cause of disease, by its influence on the circulation; by the rupture, and acute or chronic inflammation of the fibrine of the muscles, and of the other tissues of the locomotive apparatus; by irritation transmitted to the stomach; by exhaustion of the nervous power; and by producing a general languor, which favours the action of causes calculated to derange the equilibrium, and especially of cold." p. 223, 4.

These extracts, as apposite to the subject of chapter tenth, are given in anticipation from the next chapter, which embraces a *summary of the functions of relation.*

In the SECOND PART of the translation, answering to the second volume of the original, the author treats of the *Organic Functions.* These are arranged as follow:

"1. The Nerves of the Organic Functions.

"2. The Function of Respiration.

"3. The Function of Digestion, or primary assimilation with evacuation of its superfluity.

"4. The Absorption of nutritive materials.

"5. Circulation.

"6. Depuration.

"7. Secretion.
"8. Internal Exhalations.
"9. General Absorption.
"10. Nutrition.

"Such is the physiological history of the individual; then will follow that of its reproduction, in which we shall see the result of a particular act of nutrition, or a prolific nutrition, produce the re-appearance of almost all the phenomena already observed in the physiological life of the parents——"

This second part of the volume, while it is larger than the first, is, we think, at the same time, richer in pathological information, less abstruse, and more decidedly valuable, both to the student and practising physician.

Let us first take a cursory view of those opinions of our author, which are of a more strictly physiological character.

The nerves devoted to the organic functions, consist of what anatomists call the *great sympathetic*, or ganglionic system of nerves. These are, by BROUSSAIS, divided into three series:

"The first is connected with the nerves of the encephalic domain, whether cerebral or spinal, and passes with them to the muscles and the viscera; the second plunges directly into the viscera; the third embraces the arteries, and forms a plexus round their tunics, to the extent of sometimes inclosing them, as in a kind of sheath."

After enumerating the various ganglions and plexuses of this system of nerves, an inquiry, replete with ingenuity and pathological instruction, is then entered into, respecting the functions which they perform. It terminates in the following conclusions:

"1. The cords of the *cephalo-splanchnic* muscles withdraw these latter from the will, to make them obedient to the viscera; 2. the visceral cords regulate the movements of the heart, and the muscular parietes of the hollow viscera; 3. the vascular cords give power to the arteries, and invite more or less blood into their ramifications, according as the functions require it. By their presence in all the visceral arteries, they explain the redness of the tongue, eyes, &c. consecutive on gastritis; the injection and heat of the skin of the trunk which covers the inflamed viscera; the augmentation of the secretion of bile, and of saliva, in gastritis and inflammation of the gums, &c.; and by them we have accounted for sleep. In fine, the union or entire series of these nerves, as a result from what has been advanced, 1. establishes the independence of the internal movements, as regards the will; 2. forces the brain to lend its action to the viscera; 3. to receive from these latter, the excess of irritation which torments them; and, 4. to suspend

the exhaustion of vital power, so soon as it is converted to the detriment of the individual." p. 249.

An account of the phenomena, healthy and morbid, of respiration, and the apparatus by which it is performed, makes up the next chapter.

The following one, *on the functions of the cerebrum and cerebellum, as tending to throw light on the action of the respiratory muscles*, is chiefly an analytical and critical review of the experiments of ROLAND, FLOURENS, FOVILLE, and PINEL GRANDCHAMP, on the different portions of the encephalic mass. The inferences from the pathological observations which the two latter of these gentlemen have collected, and the experiments they have performed, are,

"1. That the brain is the seat of intellect, and of motion; 2. that the *corpus striatum*, and medullary fibres corresponding to this nervous mass, preside over the movements of the leg; 3. that the optic bed, and the medullary fibres to which it corresponds, that is to say, those of the posterior lobe, keep under their dependence the movements of the arm; 4. that complete hemiphlegia follows an injury simultaneously and equally affecting the parts presiding over the movements of the arm and of the leg; and that partial hemiplegia, or that which affects unequally the arm and the leg, depends on the alteration not being carried to the same extent in the optic bed and corpus striatum; 5. that the cerebellum is the source of sensibility, and not, as Mr. FLOURENS supposes, the regulator of irritation." p. 276.

The author himself holds the following language:

"The intra-cephalic vasculo-nervous matter, or the gray substance of the encephalo-spinal apparatus, the extra-cephalic vasculo-nervous matter of the sensitive expansions, the intermedial white fibres, to transmit the stimulations from all parts of the body towards the brain, and *vice versa*, such are the conditions, which to me seem indispensable, for the exercise of the functions of the nervous system; and hence the reason why I have asserted, that the brain can never act alone in the most simple intellectual process, and even in the slightest sensation." p. 280.

In *Chapter fifth* of the *second part*, we have a full, and, in our opinion, luminous exposition of the process of digestion, and the phenomena characterizing its different stages, from the first ingestion of food on to nutritive absorption. BROUSSAIS is still inclined to admit the existence of a gastric juice—a belief almost discredited of late years, by the writings of CHAUSSIER, and the experiments of MONTEGRE, and others.

"The question," says our author, "is as yet undecided; though, if we are to judge by analogy, we shall observe, that many animals are provided

with gastric glands, supplying a digestive liquid. We meet with such in the sucenturius of birds; the lamantin of the north (*Manatus.* Cuv.) presents, in the coats of its stomach, a gland of very considerable size, devoted to this purpose." p. 287.

We are desired to notice the community of vessels and nerves, between the stomach and transverse portion of the colon, in order to appreciate justly the associated action between these two parts.

Contrary to common belief, we learn from our author, on the faith of experimental observations, made by SARLANDIERE, on persons with artificial anus, that food, the least nutritive, such as the roots, stems, and leaves of vegetables, and fruits, pass more promptly through the pylorus, than farinaceous articles, as milk and meat; from which, it would seem, "that the internal gastric sense repels the aliments which offer the least assimilative matter, and retains, with a kind of complaisance, those from which it can derive better aid for nutrition." Similar observations have been made by LALLEMAND.

The cardiac region is regarded, in the work before us, as the principal seat of gastric digestion; and, moreover, we are taught, that "the pleasure of alimentation specially depends on the agreeable stimulation of the cardia, and satiety on the distention of the stomach."

In *Chapter sixth*, when treating of the *absorption of nutritive substances*, the writer does not coincide in opinion with BICHAT, as to there being a peculiar organic sensibility, called, by the latter, *elective*, residing in the lacteal absorbing vessels, and opposed to the introduction of whatever is not* adapted to the want of the animal economy.

"The absorbing surfaces are, on the contrary, very greedy, especially when the want of restoration in the system is decidedly felt; they admit the useless, the superfluous, and even hurtful, leaving it to the efforts of the animal economy to expel them by the depurating organs." p. 334.

Chapter seventh, on *the circulation of the blood*, contains a tolerably full account of the structure, functions, and diseases of the heart, arteries, capillaries, and veins. In section seventh, under the head *of the capillary circulation*, our author not only admits

* In the translation, the negative is omitted, by which the sentence conveys a very different meaning from that intended.

the opinions of BICHAT, and other modern physiologists, of the important part played by the capillaries, but goes still farther, and expresses his belief, that when these vessels "have reached a certain degree of thinness, they disappear, and the blood they contained is actually extravasated. It circulates in the interstices of the fixed animal matter, (which is every where porous,) no longer in large masses, nor even in small columns, but molecule by molecule, in immediate contact with those of this matter; and it is there that the phenomena of nutrition, of composition, and those of decomposition, must take place; and there also is verified, as respects living bodies, the axiom of the chemists: *Corpora non agunt, nisi sint soluta aut fluida.*"

We cannot, in this place, follow out the reasonings and illustrations, by which this position is endeavoured to be proved; but shall merely add another opinion of our author:

"That in this animal matter, forming the basis of all the tissues, and which always contains more or less of nervous matter, all pathological phenomena are developed;" and "that the vessels and nerves, properly so called, are affected only secondarily, the one for the conveyance of fluids, the others for the transmission of the stimulation to the correspondent parts." p. 354.

In speaking of the veins, section eleventh, a belief is inculcated, that they are endowed with contractile movements, acting from the circumference of the body towards the centre, and that this action is one of the principal forces which cause the return of blood to the heart. The liver is viewed by our author in a double capacity, as a secreting organ, and a diverticulum, or reservoir, in cases of hurried or laborious circulation, for the blood; which, but for such a provision, would dilate and rupture the large vein adjoining the heart, and unduly oppress that organ itself. "The spleen is," he thinks, "a small or secondary reservoir, or auxiliary, of the great one, which is situated in the liver." The lungs, according to him, fulfil this office for the left side of the heart, the liver being only adjuvant to the right side.

In the chapter on *the Depurations*, we learn, that the multifarious elimination of worn-out matter and salts, detached from the solids and unassimilable molecules, constituting depuration, is accomplished, to a limited extent, by the digestive canal, and more fully and completely by the skin, kidneys, and mucous surface of

the respiratory apparatus. This premised, our author thinks himself led to establish,

"1. That the three eliminating and depurating organs, which have just been mentioned, are constantly exhausting a certain portion of vital power, and that this exhaustion becomes a habit to the animal economy; 2. that these three organs are always in simultaneous action, but unequally so, and in such a manner, that whenever one of them acts more, the others act less, and *vice versa;* 3. that all three alike evacuate serosity, but that each adds to it principles peculiar to itself, and which it alone is required to eliminate."

It is also rendered more than probable, if not absolutely demonstrated,

"That the exhalent action, suppressed in the skin exposed to cold, is transmitted, through the medium of the digestive passages, to the tissues secreting and eliminating urine; and that there exists no direct relation between the kidneys and the cutaneous surface." p. 400.

This is an exceedingly important view of these phenomena, as tending to enable us to give their true value to the signs drawn from the nature of the sweat and urine, and to establish a correct diagnosis of many diseases.

Moderate irritation of the mucous surface of the stomach, acts on the kidneys, and produces an increased formation of urine; but when this irritation becomes excessive, the superfluous serosity can no longer be eliminated by the renal organs, but must find an outlet by the skin, either in the form of sweat, or, if the surface be hot and burning, as in gastro-enteritis of great intensity, it is exhaled in the form of vapour. Other phlegmasiæ, as of the liver, brain, and peritoneum, also lessen the quantity of aqueous fluid evacuated with the urine.

The first four sections of the chapter on *the Secretions*, treat of the sebaceous glands of the skin, of the mucous and the lachrymal glands, and of the secretors for digestion, viz. the parotid, submaxillary and sub-lingual glands, and the liver, and the pancreas. In Section fifth, entitled *Of the Functions of the Organs of Secretion*, our author denies the existence of proper *collateral* or *secerning* vessels, by which the secreted matter is formed. He thinks,

"That it is in the extravasation and filtration of blood, particle by particle, through the glandular parenchymæ, that these separations and transformations of circulating matter take place, by which a portion of it is made to appear with attributes that it did not before possess." p. 425.

The grounds of his opinion are these:

"The free particles, when extravasated, are in more complete contact with the primitive fibre, and can receive the transforming vital influence more readily than when they are collected in compact masses in the vessels. I have another reason to offer on this subject: it is, that a certain repose is necessary to the play of chemical affinities: now, that repose, or at least that retardation of progress, is more considerable in the extravasated fluids than in those circulating in the vessels. The vessels, according to my view, are destined to conduct the fluids, and not to change their form. I think, on the contrary, that they must, to a certain degree, preserve their peculiar qualities; for absorption, which could alter them, is scarcely performed in the excreting vessels. Whenever nature wishes to concentrate a fluid, she deposits it in a reservoir, and there removes from it whatever is superfluous, whilst the residue combines and acquires by repose the qualities necessary to the performance of the function for which it is destined."

The five sections following the above, embrace an inquiry into the *action* and *uses* of the glands before mentioned; and the chapter is terminated, according to the invariable practice of our author in this work, by a consideration of the manner in which the functions precedingly treated of, become *causes of disease.*

In Chapter tenth we read an account of '*The Internal Exhalations*,' viz. the *serous*, *adipose* and *medullary*, and of the tissues charged with these processes, as also their physiological action and pathological changes.

Chapter eleventh is on '*General Absorption*,' in which a view is taken of the lymphatic or absorbent system, its function, and morbid changes.

Chapter twelfth, on '*Nutrition*,' is replete with instructive disquisition and ingenious commentary, and serves to exhibit some of our author's peculiar views of physiological function, and of the nature of certain diseased states.

In the Chapter which follows, *on Generation*, the reader has the satisfaction of escaping the many unmeaning speculations and frivolous theories respecting this function, which abound in most works on physiology. The retrospective notices are brief, and the analysis of the opinions of the schools clear and complete. The concluding section, entitled "*In what manner the Action of the Genital Organs becomes the Cause of Diseases*," is full of instruction to the physician; and holds out to all a salutary lesson in morality,

by exhibiting the unhappy consequences of excessive or unlicensed indulgence in sexual intercourse.

The last Chapter is on *the Development, Consistence, and Decay of Man, and of the various Temperaments.* The modifying influence of the temperaments over diseases, is laid down with brevity, and yet enforced by direct fact and novel illustrations, and the alterations in the temperaments, by the influence of the circumfusa, habits, and regimen, is displayed with equal felicity.

We had intended, in beginning this analytical notice, to present our readers with a sketch of the pathological deductions contained in the work before us; but we find that our limits will not allow of such an attempt at this time, and we must content ourselves with a few selections from the chapter on digestion, which will serve as useful hints to the physician in his inquiries into the causes of diseases, and for their prevention and cure.

The sixth section of this chapter, headed *Abnormal Assimilation*, especially merits a most attentive perusal, and is of itself calculated to dispel the erroneous impressions entertained of the practice of Broussais, by those who, either from want of time, or of inclination, or of ability, have hitherto been precluded from studying his works. Some of these persons, when they descant so feelingly on the horrors of starvation and the pains of inanition, and tell us of phlogosis of the stomach being produced by hunger and thirst —all with a view of disparaging the abstemious regimen so emphatically enforced by our author, are not aware that he himself points out most explicitly the morbid effects of hunger and thirst, of which, as a sound physiologist and careful observer, he could not possibly have remained in ignorance. Hence, the section just designated, opens with a notice of the pathological phenomena arising from the absence of the external agents, or ingesta—that is to say, the morbid effects of hunger and thirst—and an assertion immediately follows, that the deficiency of stimulus produces in some of our organs an excess of excitation.

"The first shade of a pathological state which results from a defect of aliments, is, therefore, weakness: but the stomach is a singular organ; its destiny is to be always irritated, and therapeutists ought never to lose sight of this important fact. If, then, it be not so by the presence of aliments and drinks, it becomes so in their absence; it is contracted and irritated; it

invites blood, and draws towards it the fluids secreted by its annexed organs." p. 309.

Again,

"It is very certain that hunger does not fail to produce thirst; that the stomach becomes over-excited, and finally inflamed, and ends by exhibiting all the sympathies of the best defined gastritis. It is then that the pains become atrocious in the stomach and parts corresponding; and if we would remedy them, we must proceed by giving small portions of water, gradually increased in quantity.

"The thirst produced by the want alone of watery drinks, tends to the same result; the phlogosis is developed in the pharynx and stomach; solid aliments cannot be tolerated, and death takes place here as in other cases, always preceded by sadness, anger, and convulsive movements." p. 311.

But this admission of the effects of an unnatural deprivation of gastric stimuli, is not incompatible with a belief in the super-stimulation of the stomach, when it is overcharged with ingesta, or irritated by non-nutritive substances.

"Whenever the stomach is engaged in the process of assimilation, it is irritated, calls to it blood in abundance, contracts with energy, is heated, and, reacting on all the sensitive tissues, it becomes a very active centre of irritation to the animal economy. Restrained within just bounds, this excitation is favourable to the exercise of all the functions; too exalted, or too often repeated, it becomes a universal disturber, and a source of organic disorder, both in the viscus itself, and in those which sympathize with it. Alible substances, of the most healthy kind, may then generate the same evils as would follow from a deficiency of food."

Our author next points out the sympathetic participation in the excess of gastric irritation by the liver and brain, and goes on to describe the phenomena of morbid digestion—those occurring as well from excessive as from deficient stimulation of the stomach. He details the series of movements, and the consentaneous function of the parts engaged in the performance of 'the perturbating act of vomiting;' and here, in opposition to MAGENDIE and others, he insists on the active contraction of the stomach, and of its being the primary agent in bringing about the evacuation of its contents. The practical inference from the details of this process is, the danger of making too frequent use of emetic medicines, in cases in which the abuse of irritating ingesta, or the influence of another organ, has deranged the regularity of digestion. The author is here in direct array against RASORI and the Italian school of *counter-stimulus*, and contends that, if large doses of tartar

emetic be taken without vomiting ensuing, it is in consequence of this medicine causing permanent spasm of the stomach, arising from "an excess of irritation of the mucous tissue; hence the gastric sense continues to be depraved and profoundly perverted in those who have been treated by this method."

On the next line with emetics and purgatives, BROUSSAIS places

"All mineral preparations, all bitters, acrid substances and corrosives, in small doses; in a word, all medicinal agents which obstinately resist assimilation. If some among them seem to revive the digestive function, it is an illusory advantage; they all produce in the end a slow phlogosis, which depraves the normal or natural action of the gastric surface, and its disorganization is the necessary consequence." p. 323.

Our author next traces the physiological history of the youthful *bon vivant*, and shows, that, although for a time he may eat, drink, and be merry—laugh at the Pythagoreans, and ridicule the doctors, yet "this joyous mood is nevertheless occasionally interrupted by inflammatory complaints, which are always of the highest degree of intensity:—gastro-enterites, pneumonias, cephalites, anginas, ophthalmias, and acute rheumatisms, come on with violence under the influence of heat and cold, or of the passions—make rapid progress, and sometimes terminate in a few days in death." Some there are who recover promptly under any of these violent maladies, and exhibit, during convalescence, a voracity of appetite which, indulged, is followed by a return of health, strength, and fulness, so as to lead them to suppose that their medical advisers had done wrong in depleting and dieting them. But these, and another class still more vigorous, who resisted through youth and manhood the effects of the most substantial alimentation, are reminded, about the epoch of the decline of life, or fifty years of age, of their former indiscretions. They begin to have some pain in the right hypochondrium, which becomes after a while more troublesome—their complexion is now sallow—their tongue foul—mouth with a clammy and bitter taste—digestion retarded—they suffer from constipation and headache, flushes in their face, and a sensation of fatigue and weight referred to the limbs—the urine is in small quantity, red and burning. If at this time recourse is had to a physician, he "pronounces the words *gastric oppression*, *bilious turgescence*, *engorgement of the liver*, and he prescribes an emetic and a purge. Then one of two things

takes place; either the copious evacuations, produced by the medicine, restore for a time the equilibrium, or the irritation is exasperated; and in this case it sometimes passes into the acute state, and these persons have, for the first time, a pretended *essential* (*idiopathic*) *fever;* or at times it remains in a chronic state, but with a degree of inveteracy greater than before a recourse to the evacuating method."

The explanation of what takes place in the viscera of persons thus affected, is given as follows:

"The slight pain which they experienced in the right hypochondrium, was an index to the irritation, and even latent inflammation, of the duodenum, or the superior portion of the jejunum. This irritation acting on the liver, forced it to an excessive secretion of bile, which, retained in the superior part of the digestive canal, by the irritation that opposed the descent of its contents, and neutralized the action of the large intestines, was brought up into the stomach, tasted in the mouth, and at times, being absorbed, produced jaundice. The pain of the stomach, and of the upper portion of the small intestine, affecting the head, produced in it cephalalgia; the brain being stimulated, rendered the muscles painful; and all these stimulations conjoined, have destroyed the feeling of habitual strength in the individual, and substituted restlessness and sadness. The gastro-intestinal phlogosis disturbed the renal secretion, and rendered the urine of a deep colour, turbid, and in small quantities.

"Now, if in this state, in place of bleeding the individual, putting him on regimen, and administering aqueous drinks, we allow him stimuli to his irritated surfaces, why should we be astonished that the latent phlogosis is suddenly converted into acute inflammation?"

After adverting to the effect of continued irritation of the liver producing a swelling and organic alteration of this viscus, joined to hypochondriasis,—our author sums up in the following strain:

"Add to these evils, the swelling of the mesenteric glands, a necessary consequence of chronic enteritis in lymphatic constitutions; gout, or articular inflammations, in persons subjected to the action of cold, and otherwise predisposed; the colic, which succeeds, after an indefinite time, to gastro-enteritis, and which produces diarrhœa; nephritis, and the formation of calculi, a common effect of vitiated renal secretion, itself kept up by this all-interminable gastro-enteritis; cutaneous inflammations, called *herpes;* ophthalmias; diseases of the throat; the propagation of the irritation of the cardia to the left lung, and of the pylorus and liver to the right, whence results phthisis; mental alienation, often brought on by hypochondrial delirium;—and we may then have some idea of the terrible effects of high living and good wine. If to these be added, the effects of tonics, bitters, anti-gouty, detergent, purgative, and deobstruent medicines, and, finally,

the deleterious action of all those indigestible substances of which I have spoken, we shall begin to understand why longevity is of such rare occurrence among the rich, the powerful, the idle voluptuaries, and all those pretended epicureans, who so readily hailed the incendiary system of the famous BROWN." p. 327-9.

Evidences might be easily multiplied, but we doubt whether any stronger conviction could result in the minds of our readers, in favour of the analytical method of investigating morbid changes, and estimating the value of the symptoms of disease, as introduced and sustained by the study of, and acquaintance with, physiology, than from what is so powerfully set forth in the animated, and yet, we fear, too faithful picture, drawn by our author in the preceding passages. The length of these admonishes us of the necessity of drawing to a close, our notice of the work before us; and hence, we must forbear quoting some very interesting remarks and disquisitions on the venereal virus, in the chapter on the Secretions; on scrofula, and the *strumous diathesis*, under the head of General Absorption; and on inflammation, in the chapter on the Circulation. Enough, we apprehend, has been said, to show the spirit and scope of the work, an attentive perusal of which we may safely recommend; and, but for the fear of being misunderstood, we would go farther, and enjoin all classes of the medical profession, to study it carefully, as a matter of duty which they owe to themselves and the community, for the removal of misconceptions, the dispelling of errors, and obtaining a light to guide them in their future observations and inquiries.

MEDICAL LITERATURE.

RETROSPECTIVE REVIEW.

ARTICLE X.—*Traité des Fievres Malignes; des Fievres Pestilentielles et autres. Avec des consultations sur plusieurs sortes de Maladies.* 2 vol. 12mo. pp. 472. 455. Paris. 1742.

> Exegi monumentum ære perennius—
> Non omnis moriar, magnaque pars mei
> Vitabit libitinam—usque ego postera,
> Crescam laude recens,—sume superbiam
> Quæsitam meritis et mihi delphica
> Lauro cinge volens, Melpomene, comam.

THE present volumes, although published without the name of the author on the title page, we learn, from the preface of an anonymous editor, but more particularly from a long letter by Dr. DE LABBADIE, to have been the work of one of the most celebrated physicians of the commencement of the preceding century. M. DE LABBADIE informs us, that the original MS. was placed in his hands by the author;—that it was subsequently much enlarged and improved by him, after frequent conversations which they had together on the subject of the diseases of which it treats; and, finally, that it was carefully corrected by the author himself.

From many of the facts detailed in this work,—from the places in which the diseases were seen, and whither, as the author informs us, he was sent by the government, we arrive at the certainty, that this celebrated author, alluded to by M. DE LABBADIE, is CHIRAC, who subsequently attained to the highest rank in the medical profession in France, and is, to this day, considered as one of the fathers of French medicine. But, independently of such collateral proofs, we arrive at the same conclusion, from the circumstance, that these volumes were received, at the time of their publication, as the posthumous work of CHIRAC, and by no one, so far as we have been able to learn, regarded as the production

of any one else; or, at least, that they have always been considered as containing a faithful detail of the opinions of this author, on the seat, nature, and treatment of malignant fevers,—whether prepared by himself for the press, or written under his immediate inspection by M. De Labbadie.

This being admitted to be the fact in France, we see no reason to judge differently in this country; and as Chirac's pathological views of fevers, cannot fail to interest the readers of this Journal, particularly at the present time, when the nature of this important class of diseases is occupying the attention of the profession in Europe and America, we have thought that an analytical review of the volumes before us, would be read with satisfaction by all who feel an interest in subjects of the kind, but who have not the desire or opportunity of consulting the work itself.

For the information of those of our readers, to whom the reputation of the author may not be familiar, we shall offer here a brief sketch of his life.

Peter Chirac was born at Conques, in France, in 1650; and after studying with great care, at Rhodez, the philosophy of Descartes, proceeded to Montpellier, where, at the solicitation of Chicoyneau, chancellor of the then celebrated university of that city, he abandoned the ecclesiastic life, for which he was originally intended, and prosecuted the study of medicine. Endowed with a penetrating mind and solid judgment, Chirac perceived very early, that anatomy constituted the only solid basis of a rational doctrine; and devoting a considerable time to the acquisition of knowledge in that department of the science, soon became sufficiently proficient to undertake a public course of lectures upon it. In the year 1682, he graduated as doctor of medicine; and continued his lectures during five years. Not content, however, with acquiring a name as a teacher of anatomy, he applied himself, with the greatest assiduity, to the practice of medicine; and soon attained, at Montpellier, a reputation in the profession, equalled only by that enjoyed by Barbeyrac, one of the most celebrated practitioners of the place. Shortly after, he was chosen, at the suggestion of Tenque, one of the professors of the school, as his adjunct, and delivered a course of lectures on medicine to a very crowded audience. About this time, he published his essays, on the structure of the hair, on night-mare, and the iliac passion.

In 1693, CHIRAC was appointed by the Marshal de Noailles, at the suggestion of BARBEYRAC, physician to the army of Roussillon, and in that capacity was present at the siege of Roses. The opportunity being favourable, and the army under the medical care of CHIRAC being sorely afflicted with the dysentery, he was ordered by the minister of war to make trial, in that disease, of ipecacuanha, which had but lately been introduced as a therapeutical agent, and which has since been so highly lauded by ZIMMERMAN, and other writers of a more modern date; but in the hands of our author, the remedy, although used under every form, failed completely. The next year, 1694, CHIRAC was sent by the government to Rochefort, then desolated with fevers of the most malignant character, as well as with small-pox, measles, &c.; and found opportunities of making, during the course of the epidemics, more than five hundred autopsic examinations, the results of which powerfully contributed to change the views he had before entertained, relative to the nature of these diseases, and will be detailed in the course of this article. After continuing at Rochefort until the diseases, for the arrest of which he had been sent thither, had ceased, and recovering from a severe attack of malignant fever, CHIRAC returned to Montpellier, and resumed the practice of his profession.

In 1706, he accompanied the Duke of Orleans to the army of Italy; and the succeeding year, to that of Spain, where he remained until the end of the campaign. A short time after this, he repaired to Paris, and purchased, agreeably to the custom of the times, a situation in the household of the above mentioned prince, who, in 1715, appointed him, in the place of HOMBERG, his first physician, and obtained for him, at the death of FAGON, in 1718, the superintendence of the king's garden. In 1716, he was made a member of the Academy of Sciences;—in 1728, was granted letters of nobility by the king;—in 1730, was appointed his majesty's first physician, to fill the vacancy occasioned by the death of DODART;—and, finally, died at Marly, of a pleurisy, on the 11th of March, 1732, at the advanced age of eighty-two years.

"CHIRAC," as is remarked by one of his biographers, "enjoyed the reputation of an excellent practitioner; he was universally sought after, although he spoke but little and drily to his patients, and announced to them without precaution, their approaching

death. Violent towards his brethren, he exercised over them the most tyrannical empire. He was audacious enough, to shake off the yoke of the ancients. The immense influence he exercised over the practice of medicine in France, has not been sufficiently insisted upon. In order to have an idea of it, it is necessary to read the greater number of the writings of BORDEU, as we there find, that at the time this illustrious physician wrote, the theoretical and practical principles of CHIRAC continued to reign, although he died ten years before the period when BORDEU defended his thesis on sensibility."

The following is a list of the writings of CHIRAC:

1. *Lettres sur la structure des cheveux.* Montpellier, 1688. 12mo.

2. *An incubo ferrum rubiginosum.* Montpellier, 1692. This essay has been translated into French, and inserted in the collection of his consultations.

3. *An passioni iliacæ globuli plumbei hydrargyro præferendi?* Montpellier, 1694. 12mo.

4. *Lettre sur l'apologie de Vieussens.* Montpellier, 1698. 8vo.

5. *De motu cordis examen analyticum.* Montpellier, 1698. 8vo.

6. *Ergò suppuratione terminatâ, aquæ salibus detersivæ factæ preferendæ sunt sarcoticis oleosis.* Montpellier, 1707. 8vo. Translated into French, by FIZES. Paris, 1742. 12mo.

9. *Observations sur les incommodités auxquelles sont sujets les équipages des Vaisseaux et la manière de les traiter.* Paris, 1724. 8vo.

10. Finally, the work, whose title will be found at the head of this article, and which, as may be perceived, was published ten years after his death. His consultations, and several of his smaller essays, were translated into French, and in conjunction with those of his pupil, SILVA, and the biographies of these two physicians, published at Paris, in two volumes, 12mo. 1744.

As we have already remarked, CHIRAC had the courage to shake off the yoke of the ancients, on theoretical and practical points, and made a better application of anatomy to the science of disease, than had been done by any of his predecessors. He foresaw the advantage that might be derived from a study of morbid anatomy,—endeavouring, on all occasions, to discover in the dead body, the nature of the disease that had brought the patient to the grave; and tracing, in all cases, the relation existing between the symptoms noticed during life, and the visceral lesions revealed

by dissection. It is true, that many of his explanations were much obscured, amid the jargon of the humoral, chemical, and mechanical doctrines, which at that time prevailed in the schools; and on this account, although formed from good data—morbid appearances, were but little calculated to aid much in the advance of pathological knowledge. But as this is a circumstance arising from the very condition of the science, at the time CHIRAC wrote, and which he could not obviate, without possessing more original genius than he appears to have really been gifted with; and as his works, particularly the one before us, contain many valuable facts, serving to show early glimmerings of a light, which is shining forth at the present day with so much splendour, they should be regarded as possessing more merit, than the generality of those published in France during his time, and until the days of BORDEU and BARTHEZ, on subjects connected with medicine.

The first few pages of the present work are occupied with some very severe criticisms upon, and a refutation of, the ideas of the ancients, relative to the malignant, deleterious, and occult principles, to which they attributed the external and internal causes of malignant fevers, and against which their remedies were vaguely directed. CHIRAC endeavours to show, by a long train of reasoning, that the ancients, (not even excepting HIPPOCRATES, then, more than now, the oracle in medicine,) being entirely ignorant of the circulation of the blood, are not entitled to the respect paid to them by their successors. He does not spare those among the moderns, who followed, blindly and servilely, the precepts of the ancients; and lashes without pity, the physicians of Germany, and other northern regions of the European continent, for the propensity then prevailing among them, of dealing in pills, powders, specifics, &c.

Firmly impressed with the belief, that the cause of death, in those who fall victims to the different species of malignant fevers, is the same as that which produces their various symptoms, and not an occult and deleterious principle, he felt fully convinced, that in seeking and discovering the true cause of death in those diseases, it would lead him to the knowledge of the internal causes; in other words, of the particular modifications of the blood and organs, which constitute the essential character of the fevers in

question. From these reflections, he was naturally led to the conclusion, that the only method for arriving at this knowledge, was to examine, after death, the condition of the blood in the large vessels, and the sensible alteration produced by it in the principal organs.

"I knew," he remarks, "that health and life consisted only in a free and easy movement of the circulation of blood in the arteries and veins, and in the facility which the blood possesses of freeing itself from several sorts of fluids in the several ducts which nature had established for various important purposes in the body; and I saw very plainly, that one could not arrive at a just knowledge of the causes of the interruption of the circulation in the different parts—of the separation of the various recrements in the different ducts, causing a cessation of all the functions of the organs, and of various recrements which are separated from the mass of the blood, but by examining with care the disposition of the principal organs and comparing it with their natural condition: and I also perceived that the examination of the state of the blood and of the other fluids was of the greatest importance for establishing in a sure way the curative indications to be fulfilled in the treatment of these diseases, as well as of every other. The necessity of making all these researches, and discovering the manifest and sensible causes of the fatal accidents which accompany malignant fevers, appeared to me so much the more indispensable, as I knew that the only object of medicine was to combat the sensible causes of diseases, and that all possible and imaginable insensible ones, not being within its domain, physicians should only be occupied with the sensible ones, and with discriminating, among those capable of alterating the circulation of the blood and the separation of the recrements, such as actually produce disease. This method appeared to me so much the surer in this research, that I was convinced that we could reduce diseases into two great classes,—viz. into the interruption to the circulation of blood in various parts, or into the interruption to the separation of the recrements in the various ducts of the body;—that all the different accidents which deranged the natural economy of the body, and of which so many different species of disease are formed, were, properly speaking, only necessary consequences of the two grand classes I have just established. I flattered myself, that, having a tolerable idea of all that is sensible in the structure of all the organs, as well as of the sensible modifications in the fluids which keep up their action, I would not fail to discover, any sensible derangement of the fluids which had caused an alteration in the organic disposition and natural play of the parts; or, at least, that, knowing the morbid disposition and the derangement of the organs, I could, aided by the knowledge of their natural and unnatural state, attain that of the vicious modifications of the mass of blood, and of all the recrements which had escaped my notice, and all my researches."

Were not the views detailed in the above quotation, obscured amid the false notions of a humoral doctrine, we are disposed to believe, that there are but few intelligent pathologists, even of the present day, who would not feel proud to have suggested them. Chirac's ideas relative to the importance of morbid anatomy, and to the necessity of tracing the relation of the symptoms noticed during life with the lesions discovered on dissection, are well worthy of particular regard, and should, we think, have been more carefully treasured by his successors, who, with a few honourable exceptions, continued down to the present century to regard dissections as of secondary utility in establishing a rational pathology leading to a correct practice. Be this, however, as it may, Chirac, as we have already remarked, had a fine opportunity at Rochefort, of testing the advantage of his method; for at his arrival in that city, measles and small pox prevailed to great extent, and were shortly after followed by intermittent, next by malignant, and finally by pestilential fevers.

Previously to entering into any arguments on the subject of the pathology of the diseases he was summoned to investigate, Chirac devotes a chapter to the anatomical observations on which his views were established, and to some preliminary propositions, by "means of which, he remarks, physicians will be able to arrive at a knowledge of disease." From this chapter we shall extract a few passages, in order to point out the peculiarities of his opinions.

1. "Every vicious disposition of the organs, or of the fluids, circulating in their vessels, preventing the free exercise of the natural functions, I call *disease*.

2. "Every vicious disposition of the organs or fluids which deranges the functions of the organs, and gives rise to all the accidents, I denominate essential and containing (internal) causes of disease.

3. "The difference of diseases, or of the essential causes which derange the functions of the body, can only arise from the essential and specific difference of the vicious disposition of the fluids or organs; from which it follows that the vicious disposition of the internal causes of diseases, being equal and specifically similar, must produce similar diseases."

These vicious conditions of the fluids and organs may present innumerable shades in respect to degree, without giving rise to diseases differing in nature, but only in violence. It is unnecessary, therefore, to multiply diseases, the cause of which is similar, but only varying in respect to intensity.

"Every agent that does not convey the idea of certain determined effects, cannot be regarded as the cause of such effects; in other words, every cause must give the idea of the power of producing certain determined effects, and a constant relation with these effects." "To combat the causes of disease, we should not only form an idea of them, but have a physical certainty of their existence."

Medicine, he continues, has no other object than that of combatting causes, the existence of which is certain; all those which exist only in the imagination cannot, therefore, be the object of the art. Of the former, he only enumerates the internal causes, the existence of which may be detected on dissection. In his opinion, the physician should, therefore, by endeavouring to discover the relation of the effects, or external and sensible alteration, try to attain the knowledge of their internal cause. The only method of attaining this knowledge, consists in ascertaining the condition of the various viscera in those who die of all sorts of diseases. The principal among these are the internal organs contained in the three cavities of the body. To maintain the natural condition of these organs, and to cure their diseases, constitute the main object of the physician. A knowledge of the anatomy of the healthy state, is essentially necessary for this purpose, and the physician must have a perfect idea of the manner in which the organs operate in the maintainance of health and life; as without such a knowledge it is impossible to discover any internal cause of death or disease.

No physician at all versed in the true principles of pathology, will refuse to admit, that in these sorts of axioms he discovers a great deal of good sense, and a pretty solid foundation, on which more modern opinions have been established. Our author's opinion relative to the necessity of searching in the bodies of those who die of all sorts of diseases, the cause of the external effects or symptoms they manifested during life, and his idea respecting the utility of a knowledge of physiology, are especially deserving of commendation; and we were glad to find in such valuable and old volumes a powerful corroboration of views we regard as fundamentally correct, but which are very frequently regarded by some as the mere vagaries of an enthusiastic and speculative mind.

Passing next to the description of the small pox, measles, &c.

he remarks, that in all those who died of the first of these diseases, he found the brain engorged with blood of a deep red and livid hue, as well as with a large quantity of serous fluid; the lungs less frequently affected;—the liver in an engorged state;—the stomach and intestines red, and their vessels very much injected; and the membranes of the brain, the lining coat of the stomach, intestines, and lungs, containing in some places small but incomplete pustules. The gall bladder was always filled with a thick, greenish or blackish bile; and the blood in the large vessels appeared quite dissolved. In those who died of measles, he invariably found the brain, lungs, liver, stomach and intestines, of a deep and livid red colour, and the three cavities of the body generally filled with serous fluid. In several places, the stomach and intestines presented purple and livid spots, and the gall bladder was filled with a dark and thickened bile.

In the intermittent and remittent fevers which succeeded to those diseases, he found the brain, liver, stomach and intestines engorged with blood of a very dark colour. In general the cavities of the heart and abdomen contained a quantity of serous fluid, and in several instances he found sanious abscesses in the brain and liver, and the blood in the large vessels dissolved, and resembling the washings of flesh. In the malignant and spotted fevers, he found the blood, of those who had died before the fourth day, coagulated in the vena porta and in the ventricles of the heart; the brain and liver were always found engorged, in their whole substance, with dark livid blood. All the ramifications of the vena porta were injected and filled with mealy (*grumelé*) blood—the stomach and intestines were "red, inflamed, and presented livid spots." When death took place, on the seventh day, and the fever had been violent, the blood was found dissolved in the vessels and in the ventricles of the heart; whereas in those who had died on the same day, with a small pulse and cool skin, it was found very thick and partly coagulated. In some who had died on this day, CHIRAC found serous effusion between the membranes of the brain, and in the cavity of the peritoneum. In the aggravated forms of the disease, which he denominated pestilential, the same appearances, but in a more marked degree, were discovered;—the stomach and intestines presenting very dark, livid and purple spots, and the liver being occasionally found to

contain large abscesses, and to be sometimes itself, of the consistence of mush.

"The internal cause of death in so large a number of fever patients, appeared to me manifest, from the connexion I traced between the state of the blood—its thickening, with the engorgement of the vessels of the principal organs; as well as from that existing between the alterations I discovered in the brain, liver, stomach, and intestines, with the violent accidents that had attended all these diseases. I perceived so clearly and distinctly the cause of them, that I was astonished, that so many ancient and modern physicians had erred on a subject so easy to elucidate, and which was not placed beyond the reach of the senses. I was surprised they should have had recourse to occult, venomous and deleterious causes, or to poisons or worms, to account for the great mortality occasioned by malignant fevers, whilst they could, by resorting to dissection, attain, without difficulty, a knowledge of a very simple and very sensible cause, which would have been easily presented to the mind."

It would be uninteresting and useless to follow our author in the detail of his pathological views, and into the inferences he draws from the alterations found by him on dissection of those who had died of the diseases we have noticed. It will be sufficient to state, that, adopting the notions of the humoral pathology, he thought that all malignant, pestilential, and other fevers, arose from a thickening of the blood, which occasioned an obstruction in the capillaries of the principal viscera, and gave rise to what he denominated an inflammatory disposition of these organs, and an inflammation of the brain. To these lesions he referred all the symptoms noticed in the cases he observed, and, as we have seen, hooted at the idea so prevalent, even at his time, relative to occult and malignant principles to which all diseases of a low and fatal character were imagined to owe their origin. His opinion respecting the nature of inflammation, approaches, as may be seen, very closely to that taught by BOERHAAVE, and is, in one part of the present volumes, claimed by CHIRAC, who asserts, that in his lectures he had long defended it. However this may be, it is certain, that the defenders of the localization of febrile diseases—those who pretend that all fevers depend on an inflammation of the mucous surface of the stomach and bowels or of the meninges of the brain, will find in CHIRAC a powerful support. His dissections, indeed, performed without any appearance of a determination on his part to *find* what his theories led him to wish to discover—an

accusation often, and we think, unjustly, brought against some of the disciples of Broussais—speak more in favour of these views, than many long arguments adduced by some of their advocates. Five hundred post mortem examinations are not to be passed over in silence; and if in *all* the same organs are found inflamed, this circumstance cannot with any propriety be regarded as a mere coincidence, or the inflammation viewed as the effect of the fever. Were this sentiment advocated, and were the fever and inflammation maintained to be independent of each other, or the latter said to be an effect of the former, it might be asked, what are the symptoms in each case, peculiar to each disease, and how does it happen that fever will always affect the gastric organs or meninges, in preference to any other, and why will not the fever of pleurisy do the same? Until these questions are explained in a satisfactory manner, we must be allowed to regard the modern views of the pathology of fevers, backed as they are by the testimony of Baglivi, Rega, and of our author, as entitled to more regard than some members of our profession are willing to admit.

All the varieties of inflammations, he referred to different degrees of thickness in the blood; and considered the petechiæ and red spots, found on the skin of those affected with malignant fevers and plague, as arising from the same morbid process. The following extracts, conveying his opinion relative to the cause of death in, and to the nature of, these diseases, will, it is believed, be read with pleasure.

"Convinced, that a simple thickening and mealy state (grumelement) of the mass of blood, are capable of giving rise to so many different sorts of inflammatory and gangrenous tumours, not only in external, but in all the internal parts; and convinced also, from ocular inspection, that the brain and the rest of the viscera are inflamed in all kinds of malignant fevers, I easily comprehended, that a gangrenous inflammation, of large extent, of the brain,—that a great distention and engorgement of its vessels, necessarily and completely prevented the separation of the animal spirits,—that the compression of the medulla of the brain would prevent their distribution, and that the heart, as well as other parts, becoming paralyzed from the total interruption to the course of their spirits, will necessarily put a stop to the circulation, and cause death.

"I moreover comprehended, that a similar inflammation of the liver would put a stop to the separation and flow of bile, and that this ardent and fermenting humour would create, and keep up, an ebullition and fermentation in the mass of the blood, the final effect of which could only be

a total dissolution of its elements, and a gangrenous condition, rendering it no longer capable of furnishing the recrements necessary to the maintainance of all the natural functions:—That in this state of gangrenous dissolution, the blood could neither furnish to the brain, spirits of a good quality, nor saliva, bile, or gastric juice, proper for dissolving the aliments, and for extracting from it a good chyle. I comprehended, also, that a simple or gangrenous inflammation of the liver, arresting the course of the blood returning from the stomach and intestines, would cause the engorgement of their vessels, and give rise in them to a gangrenous inflammation; and I could perceive so clearly, a very necessary relation of all these accidents with the interruption of the movements of the heart, and with the cessation of all the animal functions, that it appeared to me quite useless and superfluous to have recourse to some cause of an extraordinary nature, and differing from those which occasion the most common inflammations.

"Neither had I much difficulty to comprehend the relation existing between the cessation of the movement of the heart, and the extravasations of blood in the brain; between the suppuration which took place in this organ, or in the liver, and the cessation of their functions; between the effusion of serous fluids in the substance of the brain, and the complete relaxation of that organ, and all the disorders of the liver, and other viscera, such as I have detailed them. The causes of all these accidents appeared to me very plain, and presenting nothing marvellous; and as it was very easy for me to judge, that all these causes of death, which had completely interrupted the course of the circulation, were the same as had deranged its natural course, as well as all the functions which depend upon it, I concluded, without any hesitation, that all these causes of death, when carried to the extreme,—that those gangrenous inflammations of the brain, liver, stomach, and intestines,—that those extravasations of blood and serum in the brain and liver, were precisely the containing (or internal) causes of all those diseases which I designated, in imitation of all physicians, by the frightful name of *malignant fevers.*"

As the internal or essential causes, he continues, which produce the disease, produce also all the symptoms, and as I found them to be similar, in all the kinds of fevers, from the simple to the pestilential, I concluded, that the internal or essential cause, in all these cases, was the same; and that, although these fevers had received different names, from the various accidents that accompany them, they were, nevertheless, the same disease, differing only as regards the degree of violence. For, if the violence and mortality of diseases, he remarks, were to cause them to change species, there is none among them that might not be divided into a great number.

As regards the causes of these fevers, on which our author

enters very fully, it will only be necessary to remark, that he regarded them as consisting in the increase of temperature after a mild winter,—in the marshy exhalations developed under a very hot sun, and by a south wind,—in affections of the mind, and improper regimen, the common consequences of a state of war,—in the use of sour wine, of bread made with bad flour, and, finally, in inanition.

In his fifth chapter, "on the diagnostic signs of malignant fevers," our author analyzes most of the symptoms of these fevers, and refers them to the affection of the different organs. As we cannot, from want of space, follow him into a detail of his views on this subject, we shall content ourselves with a very few remarks. To the inflammation of the brain preventing the regular flow of the animal spirits, he refers the prostration of the whole system, and particularly of the muscles; the weakness of the heart's motion, as well as of the faculties of the mind, head-ache, &c. The nausea and vomiting, as well as the hæmatemesis, the lientery, and all bloody and dysenteric stools, he referred to the inflammation of the liver, stomach, and intestines. The hiccup, he referred, also, to the inflammatory disposition of the liver, and of the cardiac orifice of the stomach. All this, however, is obscured by hypothetical explanations, with which we can have nothing to do.

"All these signs being deduced, therefore, from the cause to its proper effect, or from the effect to its sole cause, whenever they are assembled together in the same subject, they will lead to the conclusion, that the brain, liver, stomach, and intestines, are in a state of inflammatory disposition, and that the disease is really a pestilential malignant fever; and although this disease is accompanied, during its progress and at its height, with other severe accidents, as buboes, carbuncle, parotid abscesses, purple, livid, and gangrenous spots, &c. as they are all separable from the essential character of the complaint, and do not always accompany it in its commencement, progress, or height, there will be no reason to make them enter as characteristic signs of plague. Nothing would be more ridiculous, than to see a physician, who wishes to decide on the plague, wait the supervention of buboes, carbuncle, purple or livid spots, which only come on the third, fourth, or seventh day, and sometimes do not appear at all. A man would be very unfortunate, who, being attacked with this disease, which demands such prompt and efficacious remedies, and places the patient in danger of a sudden death, if his physician required three or four days of observation, to learn the nature of the disease, before establishing his cura-

tive indications, and deciding on the remedies necessary for the cure. The reason why so many accidents have been heaped together, in the description which so many writers have given of the plague, is, that being perfectly ignorant of the essential character of this disease, they could not express its nature, except by making use of general and very vague terms, such as would have been malignant, epidemic, and contagious disease, which, not giving any distinct idea of the depravation of the blood, nor of the derangement of the organs, would have left the mind of the reader in too great obscurity; so that, in order to fix it a little more to something sensible, instead of giving the essential character of the plague, they were obliged, in order to give some idea of it, to add to the general and vague terms of which they expressed the nature, a detailed account of the most sensible accidents which commonly accompany this disease, although they almost never appeared in the commencement of the attack."

Passing next to the treatment of malignant and other fevers, pursued and recommended by CHIRAC, and which is detailed in the second volume of the present work, it will not be necessary to enlarge much on the subject, as many of the indications he lays down, as well as the mass of reasoning by which he endeavours to support them, are not likely to be regarded as of much practical value at the present time. He remarks, that the indications must all be founded on the state of the blood, and on the known and sensible alterations of the organs; for, as he very correctly adds, it is going very much astray from the true spirit of medicine to establish curative indications in diseases, on vices and causes altogether placed beyond the reach of our senses, and which have no reality in nature, but only in the imagination of some writers. Judicious as are these remarks respecting the necessity of applying remedies to something positive, and not to an ideal being, called malignant principle, fever and the like, CHIRAC, although admitting the inflammatory nature and localization of the diseases he describes, and making use of some means capable of removing this morbid state, was too much attached to his ideas relative to the agency of a thickened blood in the production of the morbid phenomena he noticed, to be consistent in his views, or in the selection of his remedies. Thus, firmly convinced of the necessity of removing this unnatural state of the circulating fluids, of lessening its heat and rarefaction, of correcting the tenacity of its fatty and oily principles, of diminishing the distention of the vessels, and removing the inflammatory disposition of the viscera,

he recommends bleeding, proportioned to the strength of the patient, stating that it should in general be more copious when the weakness of the function of the affected organs was greatest. He drew sometimes as much as twelve or fourteen ounces, several times in twenty-four or even twelve hours, and until the pulse became softer. He insists that when less copious, and less frequently repeated, bleeding, instead of being advantageous, was productive of serious injury; and he generally recommended the blood to be drawn from the saphena, in preference to the veins of the arm or neck. In order that the patient should not faint, he caused him to lay with his head very low, and with a little water or wine in his mouth, and allowed the blood to flow very slowly.

So far CHIRAC was consistent with the principle he lays down,—to be very attentive in preventing the gangrenous inflammation of the principal organs; but influenced by the belief that it was necessary to give a jarring to the liver and lungs—to remove the obstruction of the biliary vessels, to prevent any alteration in the blood that might result from any fermenting matters in the stomach and bowels, and by other motives equally hypothetical, he made use, after bleeding, and particularly in bilious habits, of large doses of tartar emetic, with the view of exciting vomiting. When the pulse was weak, and the patient had been badly fed, he had recourse immediately to the emetic, and abstained from the lancet. Together with these means he administered purgatives, but never when there existed plethora; mucilaginous and slightly aromatic drinks, or such as were made of a decoction of antiscorbutic plants. When, after having employed these remedies, the skin became pale and of a leaden hue—the eyes sunken in their orbits—the pulse weak, frequent and unequal, and the skin cold—when syncope supervened, and was frequently repeated—or when there were nausea, vomiting, colloquative diarrhœa, hæmorrhagic stools, and prostration of strength, although from its known *nature* the disease appeared to him still to indicate the continuance of the remedies we have enumerated, he had recourse to stimulants. When the diarrhœa was the only symptom to be relieved, he recommended emetics, purgatives, theriaca, diascordium, laudanum, chalk, and a variety of remedies of the same sort, according as he had to contend with one or other of the different

species of the disease. For the constipation, the suppression of urine, hæmorrhages, nausea, vomiting, and delirium, he recommended bleeding, emetics, and purgatives, &c. When, from the commencement of the attack, the pulse was weak and the skin cold—in a word, when reaction had not been established in the system, he prescribed different sorts of stimulants, as sal ammoniæ, laudanum, saffron, and *lilium*. When the skin became warm, he prescribed some stimulating herbs of the class then called hepatic, joined with tartrate of potash, sulphate of soda and potash, and nitre, and next had recourse to bleeding. He prescribed narcotics internally when the viscera were irritated, and makes the observation, since frequently repeated, that in some cases in which these viscera are engorged and inflamed, pressure on the abdomen does not occasion pain. He often insisted on the danger of cordial diaphoretics, and states, that those physicians who administer them, do so with a view of driving out of the body a venomous and malignant principle, to which they refer the origin of the disease; but that in so doing they go astray from the true indications of the case. He in general proscribed aliments, even broths; but in some cases, when the patient was weak and disposed to syncope, he allowed a portion of broth immediately after the abstraction of blood.

About three hundred pages of the second volume of the present work, are occupied with consultations on various diseases. The doctrine professed in them is consistent with that advocated in the treatise we have analyzed; the thickened state of the circulating fluids, and the consequent inflammation of the various organs, playing a conspicuous part in most of the cases, however diversified, for which the author was consulted. As they present nothing worthy of our particular attention, however, we will not undertake to analyze them, but, without further remarks, take leave of Chirac, with the hope, that our readers will not consider the time we have devoted on this occasion,—picking a few good things from a mass of hypothetical reasoning under which they lay almost concealed,—as having been spent to no useful purpose.

BIBLIOGRAPHICAL NOTICES.

ARTICLE XI.—*An Essay on Morbid Sensibility of the Stomach and Bowels, as the proximate cause, or characteristic condition, of Indigestion, Nervous Debility, Mental Despondency, Hypochondriasis, &c. &c. To which are prefixed, Observations on the Diseases and Regimen of Invalids on their return from hot and unhealthy climates.* By JAMES JOHNSON, M. D. of the Royal College of Physicians, &c. Philadelphia, 1827. 12mo. pp. 154.

WE will venture to say, that this cheap, little volume, which sells for half a dollar, contains more sound precept, and wholesome practice, than will be found in one half the tumid octavos, which we buy for eight or nine times as much money, and throw by, unread, at last. It is full of clear details of what we believe to be the correct views of Dr. JOHNSON, concerning the nature and treatment of some of the most obstinate complaints, with which the physician is every day baffled, or the patient afflicted, tormented, and ultimately shuffled out of this mortal coil. We, therefore, most earnestly recommend it to our readers, as a treatise which they will be sure to peruse, if but for the pleasant style in which it is written; and sure to profit by, both as regards their own comfort, and the well-being of their patients.

Morbid sensibility of the stomach and bowels includes dyspepsia, indigestion, hypochondriasis, bilious disorder, spleen, vapours, melancholy, nervousness, irritability, mental despondency, the English malady, &c. &c. the whole of which depend on a morbidly sensible condition of the ganglionic nerves, which supply these organs. As from the stomach, a diffusive energy and pleasurable feeling may, as after wholesome food or drink, be extended to all parts of the body, and also to the mind, or, at least, to the organ of the mind, *without any distinct pleasurable sensation in the stomach itself;* so, from the stomach, when in a morbidly sensible state, may there be diffused over the whole system, intellectual and corporeal, a train of morbid feelings of the most distressing kind, with or *without* any distinct *sensation* of pain or uneasiness in the organs of digestion.

If there are many affections, dependent on morbid sensibility of the alimentary apparatus, attended with obvious disorder of its organs, there are also a great many, which are not manifested by any disturbance of them, but which are aggravated, or relieved and cured, as the patient, by turns, commits any errors in diet, on the one hand, or submits to rational treatment, addressed to the removal of morbid sensibility, on the other. We regret that the space allotted to these articles, will not permit us to follow

the author, in his explanations of the above propositions,—we must refer to the book itself.

Dr. J. does not consider pain and tenderness in epigastrio, which are the usual accompaniments of these protean diseases, as evidence of inflammation. The practice of punching the fingers into a man's epigastrium, puts him in mind of what the school-boys call "hearting," and leads to inferences and treatment which are often erroneous. "There is, in fact," says he, "at all times, and in all people, even in the highest health, a greater or less degree of tenderness, on pressure at the pit of the stomach; most probably, owing to the vicinity of the great semilunar ganglion, or solar plexus, the sensorium of the abdominal viscera. What school-boy does not know how easily he may be what is called '*hearted*,' by a slight blow in that region? I repeat it, then, that tenderness in epigastrio is an exceedingly fallacious sign, and no criterion at all of organic disease in the parts underneath."

If a whole regiment were turned out on the parade, and served after the modern mode of exploration, Dr. J. thinks, they would "all wince, from the general downwards." He might have said, a brigade, or division.

The common and indiscriminate use of leeches, on the discovery of this symptom, he regards as often injurious; whereas, the affection would more naturally and readily yield to a blister, or tartar emetic plaster. "The fact is, neither tenderness, nor pain, in the stomach of a dyspeptic, affords any proof of inflammation of that organ."

The author makes an examination of the varieties of stomach affections, before named; and, after stating their causes, whether physical or moral, proceeds to the treatment, from which we shall now make a considerable extract, and take leave of the treatise.

At p. 108, he says, "There is a great error committed every day, in flying to medicine at once, when the functions of the stomach and liver are disordered, the secretions unnatural, and the food imperfectly digested. Instead of exhibiting purgatives, day after day, to carry off diseased secretions, we should lessen and simplify the food, in order to prevent the formation of these bad secretions. From four ounces of gruel, every six hours, he will, under many states of indigestion, derive more nutriment and strength, than from half a pound of animal food, and a pint of wine. Whenever he feels an additional uneasiness or discomfort, in mind or in body, after eating, he has erred in the quantity or quality of his food, however restricted the one, or select the other. If the food and drink irritate the nerves or the stomach, it must be reduced and simplified down even to the gruel diet, above alluded to. I have known a dyspeptic patient gain flesh and strength, on half a pint of gruel, thrice in the twenty-four hours; and gradually bring the stomach, step by step, up to the point of digesting plain animal food, and biscuit.——But it is quite preposterous to prescribe a certain quantity, or even quality, of food and drink, till the power of the digestive organs is ascertained.——I care not, if the dyspeptic invalid be-

gins with a pound of beef-steaks, and a bottle of port wine, for his dinner. If he feel as comfortable at the end of two, four, six, eight, or twelve hours, after this repast, as he did between breakfast and dinner of the preceding day, he had better continue his regimen, and throw physic to the dogs. But if, a few hours after dinner, he feel a sense of distention in the stomach and bowels, or any of the symptoms of indigestion—his repast has been too much, or improper in kind; and he must reduce and simplify, till he come to that quantity and quality of food and drink for dinner, which will produce little or no alteration in his feelings, whether of exhilaration, *immediately* after dinner, or of discomfort, *some hours* after this meal.——Speaking generally, the dyspeptic invalid may commence with from four to eight ounces of plain animal food, with stale bread, and few or no vegetables, at two o'clock, drinking after his meal a table spoonful of brandy, with two or three wine-glassfuls of water."

Farinaceous food is the best, and grit gruel is its best form; a little sugar, and a tea-spoonful of brandy, in each cup, may be permitted. The patient may, as he improves in health and comfort, gradually improve his regimen, by adding beef-tea to his gruel; then, by venturing on half an ounce or an ounce of chicken, increasing the quantity of chicken to six or eight ounces, with stale bread, but not too much of that; no particle of any other vegetable matter should be ventured on. Little drink ought to be used; if he can only bear an ounce of chicken, he may have a teaspoonful of brandy in a wine-glassful of water; if eight ounces of chicken, then a tumbler of water, and a table-spoonful of brandy, is a fair allowance.

Mutton or game should succeed poultry; but in this experiment, he should keep to the "*quantity* which produces *no languor after eating, no unpleasant sensation of mind or body during digestion.*" Water is the best of all drinks, if the patient will be satisfied; but the next is the dilute mixture of brandy and water.

In regard to medicinal treatment, we cannot follow the author out, in his highly interesting details. It is important to avoid harsh purgatives; those medicines which procure loose, watery stools, are improper; the object is, to procure formed evacuations once a day; to allay irritation of the system generally, as well as of the alimentary passages, principally by medicines containing hyosciamus—by warm bitters, and, lastly, nitrate of silver; for the observations on which, we refer to the Quarterly Summary of this number.

ARTICLE XII.—*An Oration delivered before the Philadelphia Medical Society, pursuant to appointment.* By R. LA ROCHE, M. D., Member of the American Philosophical Society, &c. February 3, 1827. Published by the Society. Philadelphia. 1827.

THIS address consists of two parts, the one devoted to enforcing the essential character of physiology to the study and practice of medicine; the other an exhibition of the advantages which would result to the profession and to our medical schools, from a more extended course of instruction, and, in particular, from the introduction of a chair of physiology or the institutes of medicine.

These are such copious matters, that the orator himself has evidently found it difficult to restrain himself within the proper bounds. Like all really good subjects for public addresses, this has rolled forward such a tide of ideas, arguments, and feelings, that it has been found necessary to check them in mid career; and the oration has, from this cause, somewhat of a truncated effect. It will, of course, be impossible for us here to give a view of the matter, and we must confine ourselves to the simple expression of an opinion.

We hold, then, that an attention to physiology, as far as it was understood, has always, from the most remote antiquity, characterized physicians of superior understandings, and sound, practical sense. However misled by those prevalent systems of philosophy which deluded the strongest minds of the day, in every then existing branch of human study, we constantly find that those who were distinguished for powerful intellect, always felt the necessity of applying themselves closely to an investigation of the healthy state of the functions, and of their modifications by disease. Atoms or humours may have led them astray; they may, as in some instances, have sought for the explanation of the human functions in the seventh heaven, instead of the intestines and lungs, and in the powers of numbers, instead of those of the animal tissues; or, in other times, they may have been immersed in a darkness, deep, indeed, but still preferable to a false light; whole lives, the lives of philosophers, may have been wasted, without leaving any other memorial than the recognition of their names in turning over the pages of some history of medicine; but still, right or wrong, dark or illuminated, they have always sought, searched diligently for the interpretation of nature, for the knowledge of that foundation of medicine, the structure and vital processes of the human body. HIPPOCRATES, GALEN, CELSUS,—STAHL, BOERHAAVE, HALLER, HUNTER, BICHAT,—which of these was not a physiologist? did not take a pride in physiology? did not make improvements in it, or, at least what he considered as valuable improvements? In fact, the explanation and cause of this are very obvious: such is the natural course taken by the human mind in investigating the practice

of medicine, when it has not been misdirected by the authority of established schools, and distinguished names. We may safely appeal to the common sense of mankind, whether a person can possibly be a judge of disease, who does not understand health. "No man can ever be fitted for the exercise of the medical profession, who has not made himself minutely acquainted with the nature and extent of deviations from health; and what these deviations are, he only knows, who has most carefully and accurately studied the healthy functions in their ordinary states and operation." Such, in substance, is the opinion of CELSUS; and such is that which naturally occurs to every unbiassed mind. In fact, the doctrine, or theory, if such it can be called, which would erect diseases into so many entities—that, against which, under the shield and title of Nosology, Dr. RUSH combatted so long and so strenuously in America, and which is now the object of such earnest attacks from the modern school in France, has seldom, we think, possessed very numerous advocates among the more thinking portion of the profession. In times of warm discussion, men of superior minds, influenced perhaps by the spirit of party, have taken this stand; but in the ordinary quiescent state of medical opinions, we apprehend that the close and daily inspection of nature has led, insensibly but inevitably, to opposite modes of thinking, and the mere nosologists have been only those to whom the medical profession was an affair of routine—simply a means of gaining their daily bread, to whom it was convenient to have all their duties reduced to explicit and universal rules, in order to save them, as far as possible, the trouble of thinking. The mathematician finds his situation on the trackless ocean, by a calculation found upon demonstrable principles and intelligible methods of reasoning; but to the ordinary seaman, who does not wish to be troubled with the doctrines of spherical trigonometry, it is far more convenient to have the necessary process reduced to simple and general rules, so that he can "work his lunars" without presuming or pretending to understand the grounds on which he does it. So, to him to whom medicine is a mere means of gathering fees and accumulating wealth, that body of medical doctrine has sometimes been thought the most accommodating and convenient, which furnishes precise rules for every case, and enables the mind of the practitioner to be undisturbed in its concentration upon the great business of human life, technically styled, "the main chance." To others, however, disease appears under such an infinite variety of modes and forms, that they find it impossible to make it coincide with definitions, or to compound, from the various modes of treatment given for each of the several maladies which make up the case, such a practice as will apply consistently to them all. It is one of the most ordinary observations heard from practitioners of experience and understanding, that the longer they practise the less becomes their confidence in their own judgments, and the more intricate and obscure do the maladies appear which it is their duty to treat. This remark, drawn from the uncertainty and insufficiency of the general descriptions of disease which are given us

in our books, harmonizes admirably with the advice of the venerable Rush, to study "the state of the system," and to "equalize excitement," without seeking to make nature square with any previously described character, or to expel from the living body any entity which sate brooding like an evil spirit in the vitals, and requiring to be exorcised by a regular process. To increase the usefulness of these precepts, however, were wanting those more accurate inquiries into the nature of many important affections, which have been produced by the industry of later years, and, in particular, the whole natural history of the inflammations of the alimentary canal. We consider the modern opinions, then, so far as they may not have been unduly extended by the force of overpowering circumstances, under which their distinguished promulgator stands, not so much as a revolution, as an "instauratio ab imis fundamentis,"—as a recognition, explanation, defence, and noble augmentation of that which has been the true doctrine of all medical philosophers, from the earliest to the latest days.

We have now but little room for the remaining part of Dr. La Roche's address. Of the importance of copiously teaching that which is the foundation of medical science, but little proof need certainly be alleged. Yet this strange anomaly do most of the schools of the United States now present; and in our own celebrated university, after the failure of the unnecessary attempt to force two courses of lectures into a single period, the present professor has, very wisely and justly, resolved to omit one of them altogether, and to confine himself alone to the more absolutely essential one. The foundations unquestionably support the house; but a house without foundations, if placed upon a smooth surface, will certainly stand for a time. The splendid offer of this distinguished physician to endow a professorship of the institutes out of his private purse, is noticed in a dedication, in language certainly not stronger than that uncommon proof of liberality deserves. The orator adverts to the well known fact, that our medical schools have, during a very long period, made no advance of any importance in the number and extent of the means of education furnished by them to the students, or in the acquirements demanded of the latter for graduation. Why, in such a growing and improving country as this, exactly the same branches should be thought necessary that were so thirty years ago, is indeed difficult to ascertain; and why the rapidly extending resources of the American profession must not be allowed to show themselves in augmenting the skill of our rising physicians, as well as in the increased facilities afforded for furnishing six good courses of medical lectures in every town of the nation, we cannot see.* Dr. L. thinks the proper

* *University of London.*—The *Council* hereby give notice, that they have resolved to appoint the following Professorships, as being those *more immediately requisite* at the commencement of the Institution.—1. Greek Language, Literature, and Antiquities.—2. Roman Language, Literature, and

remedy to lie in the *public opinion* of the medical profession itself; that it is to us that the public at large, including the trustees of colleges and universities, look for information on this subject, and that the spirit of improvement is alive, and must, at no remote period, prevail over the contracted views, prejudices, and supineness of those who now withstand it.

"Of the manner in which this desired object is to be accomplished, I leave to abler hands to decide; contenting myself here with simply remarking, that not a few advantages would be likely to result from a general convention of delegates from every medical institution of the country;—the idea of which has originated in one of the eastern states, and cannot fail to meet the approbation of every sincere lover of our art. By such a plan, the voice of the profession from Maine to Louisiana, will be heard, and the necessity of additional requisites, independently of other points of no less moment, will be fairly discussed, and I dare hope, established beyond the possibility of contradiction."* B. H. C.

Antiquities.—3. English Literature and Composition.—4. French Language and Literature.—5. Italian and Spanish Languages and Literature.—6. German and Northern Languages and Literature.—7. Elementary Mathematics.—8. Higher Mathematics, and Mathematical Physics.—9. Experimental Physics.—10. Chemistry.—11. Zoology and Comparative Anatomy.—12. Application of Physical Sciences to the Arts.—13. Logic, and Philosophy of the Human Mind.—14. Moral and Political Philosophy.—15. Jurisprudence, including International Law.—16. English Law, with, perhaps, separate Lectures on the Constitution.—17. History.—18. Political Economy.—19. Anatomy.—20. *Physiology*.—21. Surgery.—22. Midwifery, and Diseases of Women and Children.—23. Materia Medica and Pharmacy.—24. Nature and Treatment of Diseases.—Application from candidates for the professorships, will be received until the 1st of May, 1827.

T. A. Cox, L. L. D., *Hon. Sec'y to Council.*

Thomas Coates, *Clerk.*

* "Circular.—*Berkshire Medical Institution, December 29th*, 1826.—Sir—The Faculty of the Berkshire Medical Institution having received with much satisfaction, the proposals made by the Medical Societies of Vermont, New Hampshire, and Massachusetts, for the improvement of medical education, by producing an uniformity in the qualifications of candidates for medical degrees and licenses, most willingly acquiesce in many of the propositions submitted to them; and considering the importance of this subject to the whole community, and the advantage which would be derived from a free interchange of opinions on these and other subjects having the same general bearing which might be suggested, they think that a convention, as proposed in the circular of the Massachusetts Medical Society, would be the best mode of discussing these topics.

"Many reasons will present themselves to every one, why a National

ARTICLE XIII.—*Observations on the Efficacy of the White Mustard-Seed, in Affections of the Liver, Internal Organs, and Nervous System, and on the General Management of Health and Life.* By CHARLES TURNER COOKE, Consulting and Operating Surgeon, at Cheltenham. 3d edit. Gloucester, 1826. pp. 120. 8vo.

WE are so fully persuaded of the value and necessity of the axiom, *ne quid nimis*, that we were, at first, tempted to laugh outright at the pretensions set forth in this book, in favour of the white mustard-seed; but the evident philanthropy of the motives, and the strong vein of good pathological sense which runs through the work, engage us to receive, as far as we dare, recommendations, even so sanguine as the following: The use of mustard-seed "deserves to be hailed as one of the most decided discoveries of general usefulness, and applicability, that has ever been dispensed to suffering man; yet, more, (to speak the language of one not less benefited by its agency than myself,) I fully expect that it will considerably lengthen human life in this kingdom, and finally be adopted throughout the world." p. 73.

As this article affords us small space, we must leave all remarks, and begin to give some account of the book.

In March, 1824, Mr. JNO. TURNOR, of Stoke-Rochford, near Grantham, published, in newspapers and in single sheets, an account of the uses of

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Convention should be more useful, and accomplish the purpose more effectually, than any which is merely sectional—they apprehend that those Institutions which are situated on the borders of that section of country from which the proposed convention is to be formed, may have some conflicting interests to prevent them from entering upon so laudable an object—they might not readily comply with proposals which would have a tendency to induce students to resort to other Institutions, where the requisitions are less—this would be prevented, if all the Medical Institutions, or the most important of them, were to send delegates to a general convention. In order to do this, however, it would be necessary to appoint some more central place for the meeting, perhaps New York, and to fix on some more distant time.

"They merely make these suggestions for the consideration of your , by no means intending to dissent from the proposition of the Massachusetts Medical Society.

"Should it still be thought expedient, they will appoint a delegate to represent them at Northampton, on the second Wednesday in May next.

"By order of the Faculty.

"JOHN P. BATCHELDER, *Dean.*"

mustard-seed, in order to diffuse the knowledge of its value among all the classes of the population. This tract is reprinted, verbatim, in Mr. C.'s work, the object of which is, mainly to explain and enforce the sentiments of Mr. TURNOR's observations; and we conceive it to be our duty to lay the greater part of it before them, premising, that Mr. COOKE speaks in the following manner of his friend, Mr. TURNOR: "He is as much above every possible temptation to empiricism, or to disingenuousness of procedure, as all who excuse or encourage either, must, in the same nature of things, be below his friendship."

The tract is entitled, "Observations on the efficacy of White Mustard-Seed, taken whole." Mr. TURNOR says, "In the month of July, 1822, I made trial of the white mustard-seed, merely as an aperient; when the generally improved state of my feelings, which soon followed, inclining me to give it credit for other medicinal properties, of at least equal value, I gave it to some of the sick poor in the neighbourhood, and with a success which excited my astonishment. From that time to the present, I have been in the habit of recommending it very generally, and the opinion which I have always entertained, is more fully confirmed—that the public is not aware of its extraordinary powers, nor of the very great variety of cases to which it is applicable; and that in order to its adoption as a remedy for disease, its virtues require only to be known."

We shall condense the following catalogue of its virtues, which, like that of the Harlaem oil, occupies two pages.

"The white mustard-seed is an almost certain remedy for all disease connected with disordered functions of the stomach, liver, and bowels;" and, as branches thereof, in tendency of blood to the head, head-ache, weakness of the eyes and voice, and hoarseness; asthma, cough, indigestion, heart-burn, cramp of the stomach, debility, and pain or soreness at the pit of the stomach; scanty and redundant flow of bile, obstructions of the liver, gravel, scanty urine, and other renal complaints; relaxed and irritable bowels, flatulence, costiveness, rheumatism, lumbago, dropsy, palsy, anorexia. "In ague, gout, rheumatic fever, epilepsy, scrofula, scurvy, erysipelas, in tic doloureux; in recovery from small-pox, typhus and scarlet fevers, and other severe diseases connected with a depraved state of the interior, it has been taken with very considerable advantage." For the lumbricus and ascaris, it is incomparably "the best remedy hitherto discovered," &c. &c. p. 12.

Next comes a case: A man, at 52 ætat., attacked with pain in his left side and lower part of his body, took calomel, rhubarb, oil, &c. without advantage. Emetics, bleeding, blisters, and seventy-two hours of perspiration, abated the pain, and left him weak and emaciated; for two years after, violent returns of pain took place, in spite of professional men and their medicine; he was undermined in constitution, and had the appearances of "general decay." In November, 1822, he tried mustard-seed; in a few

days, the pain ceased, and has never returned. The patient got rid of some calculi, which probably had a large share in bringing about this "state of wonderful improvement." p. 14.

Mr. T. next proceeds to show, that it not only can cure, but prevent diseases; and tells us of his friend, who, for five or six years previous to 1825, had been regularly attacked with asthma, in June or July, and the patient was generally confined, after each attack, nearly three months. In March, 1825, he began to take the mustard, a dessert spoonful every day, one hour after dinner; and has not only never had a paroxysm of asthma since, but his health is uninterrupted by any ailment. p. 15.

"In the mustard seed are combined, a valuable aperient and equally valuable tonic; and thus, while it affords the most salutary and comfortable relief to the bowels, it never weakens, but, on the contrary, always strengthens, in a very remarkable degree, both those organs and the stomach, and ultimately the whole system. Its efficacy probably consists in a communication of energy and activity to those movements of the canal, by which the aliment is propelled; and in this way, perhaps, it operates in animating and improving those secretions of the stomach, pancreas, and liver, by which digestion and chylification are effected." p. 18.

"The mustard seed is always to be swallowed whole, and either alone, or in a little water, warm or cold." p. 20.

If some boiling water be poured over them, the seeds are soon covered with a mucilage, which makes them easy to be swallowed, after all the water is drained off.

"Generally speaking, three doses should be taken every day, without intermission; the first, about an hour before breakfast; the second, an hour after dinner; and the third, at bed-time, or an hour before." p. 20.

The quantity in each dose must be determined by the effect produced on the bowels, which are not to be purged, but maintained free and open. Each dose should be so large, as that the whole taken in one day, may operate once the next. This is the whole art of using the seeds. Generally speaking, two or three large tea-spoonfuls, in each dose, will procure the desired effect; some require less, but some will require a table-spoonful.

The seed must be used in this manner "for the space of two, three, four, or six months;" but in many instances, a much shorter period will produce the conviction of "its extraordinary efficacy, and singular value," &c. p. 25.

There are rather more than a hundred pages of Mr. Cooke's pathological and practical observations, intended mainly to "bear testimony to the truth of the tract, and to account for the seeming absurdity of such a classification of disordered states." With these we have nothing to do, except to say, they are sensible and discreet; and that the book closes with an appendix of a correspondence with persons who have been beneficially using Mr. Turnor's and Mr. Cooke's advice in relation to mustard-seeds.

ARTICLE XIV.—*An Elementary System of Physiology.* By JOHN BOSTOCK, M. D. Vol. II. London. 1826, 8vo. pp. 643.

THE first volume of this work appeared in 1824, and the medical public will rejoice to learn, that this second volume is soon to be followed by a third, from the same distinguished author, whose elaborate learning in every branch of physiological researches, as well as his known candour and impartiality, make him peculiarly well fitted for preparing a good English system of physiology, a work not yet extant. Dr. BOSTOCK pursues the same method in the second, which he adopted in the first volume; the references are, however, more full and instructive, if possible. We doubt not, that an American edition will be given of this second volume, by the enterprising publishers, to whom we are indebted for the cis-Atlantic edition of the first. It is what may be called a parlour book, always entertaining and instructive.

ARTICLE XV.—*A Manual of Chemistry, on the Basis of Professor Brande's; compiled from the Works of Brande, Henry, Berzelius, Thomson, and others. Designed as a text book for the use of Students, and Persons attending Lectures on Chemistry.* By JOHN W. WEBSTER, M. D. Lecturer on Chemistry in Harvard University. Boston, 1826. 8vo. pp. 603.

THE design of the present compilation, as explained in its title, is to embrace in one work, of reasonable limits, the more important parts of the most esteemed chemical systems of the day. Accordingly, it consists of excerpts from the works of BRANDE, HENRY, URE, THOMSON, and others, interlarded with matter in the proper language of the compiler. The arrangement, which resembles that adopted by Dr. HENRY, consists in the division of the elementary bodies into three classes; namely, electro-negative substances, electro-positive substances, and metals. From this account of the work, it might be inferred, that Dr. WEBSTER's task was exceedingly simple, having his arrangement and matter prepared, as it were, to his hands; but we are by no means disposed to depreciate the value of his labours, being fully convinced, that compilations like the present, to be well executed, require extensive knowledge of the subject treated of, and the exercise of much judgment.

From the cursory examination which we have given to Dr. WEBSTER's volume, we are disposed to believe, that he has performed the task which he has undertaken, with commendable success. The more valuable matter of the works from which he has culled, has been extracted, and connected into a treatise, with considerable judgment; and hence, we are willing to

admit, that, as a concise elementary work on chemistry, it has advantages not possessed by the treatises of BRANDE or HENRY, which have been, heretofore, the most esteemed in this country.

We are still of opinion, that the performances of BRANDE and HENRY are excellent in themselves. But they have peculiar merits and defects; and it may be easily conceived, that a writer, seizing on the best features of the two works, and combining them into one, may produce a third, more concise, and better adapted for learners, than either.

Both the works above alluded to, may be considered as too voluminous for text books. With the exception of the American edition of BRANDE, they extend to more than one volume, and are, therefore, not convenient for following lectures.

With these general remarks on the character and texture of Dr. WEBSTER's book, we proceed to make some comments on its details.

We are glad to find that Dr. WEBSTER adopts the hydrogen unit for proportional numbers, whenever he gives the composition of substances in such numbers. We are satisfied, that this is the correct system, and must, in the end, obtain universal assent.

With reference to equivalent numbers, we must be permitted to express our regret, that no table of them has been given in the present work. No plea of the necessity for brevity can justify this omission, when Dr. W. has sometimes included in his work, accounts of substances of doubtful importance; such, for example, as the hypo-sulphates and hypo-sulphites, not to mention other classes of compounds. With regard to the equivalent numbers themselves, given in the course of the work, it has not happened to us to observe more than one, not in conformity with the latest determinations. We allude to the number for iodine, which is given at 125; while the latest determination, (that of Dr. THOMSON, in his First Principles,) makes it 124.

As connected with equivalent numbers, we shall here notice the manner in which the theory of volumes is applied. In conformity with the excellent usage of Professor BRANDE, the composition of a portion of the gases is expressed by diagrams, in which the relative bulks of the constituents are represented by geometrical figures, while the weights of such bulks are denoted by numbers printed within them. Why the same plan of representation has not been applied in all cases of gaseous combination, we cannot imagine; and for this reason, that we should suppose that the great advantages of this mode of representation must be felt by every one, who has been engaged in teaching the science.

While it is easy to understand, that we may have a series of numbers, expressive of the proportions in which gases combine in weight; it cannot be difficult to conceive of a similar series, denoting their proportions of combination in bulk; and the latter series, which might be called equivalent volumes, may be represented, after the manner of Mr. BRANDE, by geometrical figures. It is further evident, that if the equivalent volume of any gas be assumed to represent the bulk of a quantity of such gas, denoted by its equivalent weight; then, on that assumption, the equivalent volume of

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With reference to equivalent numbers, we must be permitted to express our regret, that no table of them has been given in the present work. No plea of the necessity for brevity can justify this omission, when Dr. W. has sometimes included in his work, accounts of substances of doubtful importance; such, for example, as the hypo-sulphates and hypo-sulphites, not to mention other classes of compounds. With regard to the equivalent numbers themselves, given in the course of the work, it has not happened to us to observe more than one, not in conformity with the latest determinations. We allude to the number for iodine, which is given at 125; while the latest determination, (that of Dr. THOMSON, in his First Principles,) makes it 124.

As connected with equivalent numbers, we shall here notice the manner in which the theory of volumes is applied. In conformity with the excellent usage of Professor BRANDE, the composition of a portion of the gases is expressed by diagrams, in which the relative bulks of the constituents are represented by geometrical figures, while the weights of such bulks are denoted by numbers printed within them. Why the same plan of representation has not been applied in all cases of gaseous combination, we cannot imagine; and for this reason, that we should suppose that the great advantages of this mode of representation must be felt by every one, who has been engaged in teaching the science.

While it is easy to understand, that we may have a series of numbers, expressive of the proportions in which gases combine in weight; it cannot be difficult to conceive of a similar series, denoting their proportions of combination in bulk; and the latter series, which might be called equivalent volumes, may be represented, after the manner of Mr. BRANDE, by geometrical figures. It is further evident, that if the equivalent volume of any gas be assumed to represent the bulk of a quantity of such gas, denoted by its equivalent weight; then, on that assumption, the equivalent volume of

every other gas will represent the space occupied by a quantity of such gas, expressed also by its equivalent weight. Hence, by having two such series of numbers, we may for any gas, substitute its equivalent weight for its equivalent volume, or conversely, without any possible error; since these equivalents severally represent the *same* quantities of the respective gases, viewed under the two relations of weight and volume.

There is a disposition in most of the modern chemical writers, to adopt numbers to represent volumes, made up with reference to a series; but in many instances, they employ independent ratios, that is, proportions, correct for the particular gaseous compound, intended to be represented, but which cannot be linked with ratios, previously employed for other gaseous compounds, these ratios being expressed in numbers, either too high or too low to permit of the catenation. When the equivalent volumes are used, there is also a disposition to set out with hydrogen as unity in volume, as well as in weight; and then the volume of all the other simple bodies, which are either gaseous, or susceptible of being gasefied by combination, come to be represented by unity also, with the single exception of oxygen, which becomes denoted by half a volume. This plan, in the general, is adopted in Dr. WEBSTER's book, in which oxygen is usually represented by half a volume, and we are thoroughly convinced that it is the best; but we regret to find that it has not been followed out. Thus, at page 135, we have this statement:—"One volume of ammonia is resolved by electric decomposition into two volumes of a mixture of hydrogen and nitrogen, consisting of three volumes of hydrogen and one volume of nitrogen." Here we would prefer to use the equivalent volumes, and say, that two volumes of ammonia become four volumes of a mixture of hydrogen and nitrogen, consisting of three volumes of hydrogen, and one volume of nitrogen; for it is evident, that, in the statement of our author, the word volume is used in two senses, and that it might create a difficulty with the student to understand how two volumes could consist of four volumes, and lead him to the erroneous conclusion, that the two volumes must be doubled in bulk. The diagram for ammonia, however, is correctly given.

Again, Dr. WEBSTER copies the following from Dr. HENRY: "One volume of cyanogen = two volumes charcoal and one volume nitrogen, decomposes *one atom* of water = one volume of oxygen and two volumes hydrogen." Here, to preserve the equivalent character of the quantities, the words in italics ought to be, *two atoms;* and to follow out the reasoning in the next paragraph, in unbroken equivalent volumes, the quantities given, with our correction, ought to be doubled.

Speaking of the composition of carbonic oxide, Dr. WEBSTER adopts the following statement from Dr. HENRY: "On the theory of volumes, it consists of one volume of oxygen + one volume of gaseous carbon, the oxygen being in such a state of expansion as to occupy the space of two volumes." This is a very injudicious adoption from Dr. HENRY, since the idea intended to be conveyed is very obscurely expressed. The passage

is intended to mean, that the gas in question consists of one volume of oxygen+one volume of gaseous carbon, the oxygen being deemed to have the bulk to which it is expanded in the gas, this bulk being the double of that which it has when uncombined. But how much better would it be to say, that carbonic oxide consists of one volume of gaseous carbon, and half a volume of oxygen, the volume and a half being condensed into one volume? or that half a volume of oxygen, when combined with carbon, so as to form carbonic oxide, becomes one volume of this oxide?

Dr. WEBSTER says, p. 190, "Carbon and hydrogen combine and form olefiant gas, consisting of one proportional of carbon+one of hydrogen. Its composition will be 12 carbon, 2 hydrogen, } two volumes of each condensed to one.

14."

And here it may be asked, that if olefiant gas consists of one proportional of each of its constituents, why is it not correctly represented by 6 carbon +1 hydrogen = 7, equivalent to one volume of each, condensed into half a volume? Can it be necessary to resort to a duplication of the equivalents in weight, for the purpose of having a corresponding duplication of the equivalent volumes, in order to avoid representing the resulting volume by half a volume? We should think not; and so far from its being inconvenient to represent the combining volume of olefiant gas by half a volume, it must be so represented in the system of volumes here advocated, and which is adopted in the main by Dr. WEBSTER himself. Indeed, he seems to have felt the propriety of this volume-representation for olefiant gas; for in a diagram given in the next page, he represents it by half a volume.

Under the nitrous oxide also, Dr. WEBSTER doubles the volume-equivalents, though the electrical analysis given, would naturally lead to the statement of the simple equivalents, and though the diagram subjoined is in conformity with such equivalents.

Protoxide of chlorine "explodes by a gentle heat, and five parts in volume become six, consisting of a mixture of oxygen and chlorine gases, in such proportions, that" protoxide of chlorine "must be composed of two in volume of chlorine, and one of oxygen, *the latter being condensed into half its bulk.*"

This extract has been adopted from Dr. HENRY, evidently without sufficient examination; for we believe, that Dr. WEBSTER, on reflection, will be disposed to admit, that the words in italics are, to say the least, very obscure. We would be disposed to denote the facts connected with the composition of this gas, in the following manner:—a volume and a quarter of protoxide of chlorine, exploded by heat, become a volume and a half, consisting of a volume of chlorine, and half a volume of oxygen. Here then it is seen, that the increase of bulk, which the chlorine obtains, is equal to half the bulk of the oxygen which it receives, and it is this circumstance which has led Dr. HENRY, and after him Dr. WEBSTER, to say, that the

oxygen is condensed into half its bulk. But we cannot help believing, that this is an unusual, not to say unphilosophical, view of the subject. If we had a gas composed of two volumes of oxygen+one volume of chlorine, condensed into one volume; then we might say, with strict propriety, that the oxygen was condensed into half its bulk, but certainly not in the case of protoxide of chlorine.

Before dismissing the subject of combination by volumes, we may mention several errors, which we have detected in the statements of the composition of some of the gases, the correction of which may be adviseable in future editions of the work. Thus, the symbol given to represent nitric oxide, corresponds with one volume of nitrogen+one volume of oxygen=*one volume of nitric oxide*, instead of, *two volumes of nitric oxide*. It is singular that Dr. WEBSTER, in copying the mode by which this gas may be decomposed from BRANDE, should subjoin his symbol, erroneously altered. It is either a typographical mistake, or else Dr. W. has been misled by this ambiguous expression of BRANDE, "that one volume of nitric oxide is resolved into equal volumes of oxygen and nitrogen."

In the account of nitrous acid gas, there is an inconsistency; the text stating that the constituents of the acid are condensed into about half their original volume, and the symbol given, indicating that they are condensed into two-thirds of their original volume.

At p. 180, we have this passage: carbonic acid "may, therefore, be considered, under this aspect, as constituted of one volume of *oxygen*+half a volume of *carbonic oxide*, condensed into one volume." The words in italics ought to be transposed, so as to make the latter part of the sentence read thus: "constituted of one volume of carbonic oxide+half a volume of oxygen, condensed into one volume." The paragraph in which this error occurs, is copied from Dr. HENRY, and only varies from the original in the erroneous transposition noticed. We are, therefore, disposed to consider it a typographical error.

Dr. WEBSTER copies from Dr. HENRY, that the specific gravity of muriatic acid, when obtained by means of WOLFE's apparatus, and especially when the bottles are surrounded by ice or snow, approaches to 1.500. This is an error in Dr. HENRY, or, if founded on any authority, at least an obsolete statement. The maximum specific gravity of muriatic acid is generally given at 1.21. In winter, Dr. THOMSON has obtained it as high as 1.212; and this fact is given by Dr. HENRY, in the next page to that in which he says it may be made to approach in specific gravity to 1.5.

At page 175, it is said, "There are *two* compounds of carbon and oxygen; the carbonic oxide, and the carbonic acid." We should say, there are *three*, placing oxalic acid among the number.

Dr. WEBSTER follows Mr. BRANDE, in supposing, that there is no such combination as light carburetted hydrogen, as a definite compound; though its existence appears to be so well made out by the observations and experiments of Drs. HENRY and THOMSON. Accordingly, Dr. WEBSTER recognises

but one combination of carbon and hydrogen; while we are disposed to believe that there are *three*, namely, olefiant gas, light carburetted hydrogen, and naphthaline.

Dr. WEBSTER's book is well printed, furnished with numerous side notes, and embellished with seven large plates. It would be an improvement, however, to have substituted wood-cuts, in the body of the page, for the numerous figures in the copper-plates. This plan, which has been adopted with so much success by Mr. BRANDE, facilitates reference, and enables the student to examine one figure at a time, without the confusion arising from numerous figures crowded into one plate.

In a medical journal, we should not feel ourselves justified in noticing an elementary work on chemistry, intended for general readers, were it not the usage in this country to adopt such treatises for the instruction of medical students. But it is much to be desired, that a good work, adapted to the wants of the medical student and practitioner, were prepared, from which all irrelevant matter were carefully excluded, and embracing only those facts which have an application to medicine and pharmacy, with such additional ones, as may be necessary to the elucidation of the principles of the science. Such a work would be, in the strict meaning of the term, a medical chemistry. Heretofore, so far as we are informed, there have been made but four attempts to prepare works of this kind. We here allude to Dr. ORFILA's Elémens de Chimie Médicale, published at Paris in 1817; Dr. BACHE's Chemistry for Medical Students, published in this city in 1819; M. JULIA-FONTENELLE's Manuel de Chimie Médicale, published at Paris in 1824; and Dr. PARIS's Elements of Medical Chemistry, which appeared in London in 1825. So long, however, as chemical treatises of general import, continue to be the text books of medical students, we shall consider them as proper subjects for medical review.

QUARTERLY SUMMARY

OF MEDICAL AND SURGICAL INTELLIGENCE.

I. ANATOMY.

1. *Absence of the Gall bladder.*—M. Godelier, surgeon in chief of the military hospital of Rochelle, gives us, in the Journal Universel, Sept. 1826, an account of a young man, who, having enjoyed good health during his life, was killed by a fall, in the 26th year of his age. On dissection, the fossa, usually occupied by the gall bladder, was not to be found; the surface of the liver being there as smooth and even as on its convex portion presented no trace of the existence of a gall bladder. The hepatic duct being carefully dissected, was found about double the common size. There was no cystic duct. In order to ascertain if there might be a concealed and misplaced biliary cyst, the liver was cut into small pieces, but no gall bladder could be detected. This case proves that man may enjoy good health if born without a gall bladder; and yet we know, that obstructions of the cystic duct by calculi, and the complete filling up of the cyst with the same materials, even where no bile seems to enter it, are capable of destroying the health and even life itself. We lately examined the gall bladder of a patient, which was closely contracted on a calculus about as large as the thumb. The patient died with jaundice of several months duration, after becoming greatly emaciated, and in some parts of the skin nearly as black as a negro. The hepatic duct, however, remained open.

2. *Monster.*—Mr. G. St. Hilaire presented to the Academy, in September, a monster, which lived three quarters of an hour after its birth. The peculiarity in this case was, that the mass of intestines was retained outside of the abdominal cavity, by an accidental adhesion. It had neither sexual organs nor anus.—*Rev. Med. Oct.* 1826.

3. *The Human Fœtus.*—Dr. Pockels has had within the last few years opportunities of collecting more than fifty specimens of the human fœtus, under six weeks of gestation, and found four to be perfectly formed, (conformés,) which had been expelled from the eighth to the sixteenth day after conception. His method of proceeding in their examination is detailed in the Archives Generales, together with a minute account of the changes which take place from the earliest traceable period of its uterine existence. Such as examine Dr. Pockel's account, will more readily admit the accuracy of Mr. Bauer's and Sir Everard Home's relation of their microscopic man, in the Philosophical Transactions of London.—*Archives, Oct.* 1826.

4. *On the Communication of the Absorbing with the Sanguiferous vessels.*—Experiment 1.—In a young man who died with phthisis, Dr. Rossi injected with mercury the lymphatic vessels passing out from the intestinal glands on the left side, after having tied the thoracic duct about four inches above the diaphragm: when the thoracic duct below the ligature was full, he suspended the operation. No lymphatic vessel was injected in the mesentery; nor was any one found emptying itself from the principal ramifica-

tions of the vena portæ. "The vasa efferentia of the inguinal glands in which the tube had been placed after having passed the external and primitive iliac glands, went, as is usual, to the inferior lumbar glands, forming a plexus, and lastly to the superior lumbar glands: from these two, the lymphatics went out, and, reuniting in a few trunks, gave origin to the receptacle of Pecquet. From the same glands I also saw three vessels take their origin, not very well filled with mercury, and not very small; which vessels, instead of going to the thoracic duct, emptied themselves evidently, one into the vena cava, just as it emerges from the posterior curvature of the liver, one at the beginning of the left emulgent vein, and the third again in the vena cava, near the termination of the right spermatic vein." Dr. R. next secured the places where these vessels terminated, with ligatures; upon reapplying the injecting tube, they became filled with mercury.

These vessels had no valves, which are always found in lymphatic vessels, and never in the blood vessels of the great cavities—hence these were veins.

Upon separating the lumbar and iliac glands from the body, he found numerous small vessels, given off from their lateral and posterior surfaces, which contained some mercury; some leading directly into the vena cava, some into the primitive iliacs, and others into the last lumbar vein but one on the left side, which traverses the lumbar column passing under the aorta: they were a few lines in length, and had the aspect of veins.

Experiment 2.—Many small vessels terminated in the ramifications of the vena portæ, especially in the splenic vein.

Experiment 3.—Injection of the iliac lymphatics, as well as those of the mesentery. Many branches were found emptying into the vena cava, as well as in the ramifications of the vena portæ.

Experiments 4th and 5th.—These were performed on two extenuated bodies. In one the injection was begun above the right knee. The inguinal glands were injected, and the minute veins going from them into the femoral vein, contained globules of mercury, together with blood. He proved that these were veins, and not lymphatics, as they had no valves.

Experiments 6th, 7th, and 8th.—The iliac and mesenteric lymphatics of three bodies injected, and the same branches going into the veins as before, afforded similar results to those above detailed.

"From these experiments, it appears to me, 1st. That mercury injected into the lymphatic vessels, after having traversed the glands, passes into the veins by means of certain vascular branches, which afford a communication between the large veins and the glands themselves.

2d. "That these branches, though having at first sight the appearance of lymphatics, ought to be considered as veins, whose principal office is to carry back the blood which is superfluous for the nutrition of these glands. Mascagni and others have before shown, that in 'many injections of the lymphatic system, the minute veins of the glands are filled.' Mr. Rossi thinks it is clear, then, that the communication between lymphatics and veins does not take place by branches, and infers, that it is probably effected in the ultimate subdivision of these vessels in the parenchyma of the glands. He does not 'positively *conclude*, that no lymphatic trunk communicates directly between the two systems;' but the branches seen by him must be regarded as veins, and not, as they at first sight would appear to be, lymphatic vessels."—*Annali Universali apud London Med. and Phys. Journal, Jan.* 1827.

5. *Circulation in the Spleen.*—Mr. Andral has ascertained that in the splenic *veins* of the horse, there exist numerous openings through the sides of the vessels, by which blood contained in the cells of the spleen may pass directly into the circulation. Hence, the frequently sudden disappearance

of swellings of this viscus may be readily explained by the easy restoration of a free course to the general movement of the blood.—*Archives, September and October*, 1826.

6. *Absence of the Uterus.*—Mr. Renauldin presented to the Royal Academy of Medicine, the genital apparatus of a woman fifty-two years of age. She was three feet six inches in height, and had never menstruated. The exterior parts were of a good conformation, but instead of the neck of the uterus, the finger in vaginam discovered only a small tubercle. The vagina terminated in a sort of cord, having a small canal, which constituted the neck of the womb; the body and fundus were wanting. The cord above mentioned communicated with the fallopian tubes, which were very small at the place where they terminated. There were scarcely the rudiments of ovaries.—*Bulletin, Sept.* 1826.

7. *Anatomy of the Uterus.*—Mr. Baudelocque (nephew) presented a womb which contained a tube leading from the right fallopian, and enclosed in the substance of the organ, but opening into the cavity of its neck; the rest of the apparatus was sound.—*Ibid.*

II. PHYSIOLOGY.

8. *Superfœtation.*—At the session of the Royal Academy of Medicine, a fact was stated, in relation to what is called superfœtation. It seems, that a mare, (jument poulinière,) five years old, foaled a horse colt, and in a quarter of an hour afterwards, was delivered of a mule. The animal had been covered by a stallion, and five days afterwards by an ass.—*Rev. Med.*

Is this fact any more wonderful, in a physiological point of view, than the very common one, in which a bitch litters puppies of many varieties, such as the bull-dog, greyhound, spaniel, &c.?

9. *Experiments on Poisoning.*—Mr. Segalas, in a communication to the Academy of Medicine, details some experiments, tending to prove, that poisons produce their effects on the organs more by means of the vessels, and consequently by absorption, than by the intervention of the nerves. 1st. Having cut the spinal marrow, so as to produce paraplegia, he introduced alcoholic extract of nux vomica into the paralyzed parts. Tetanus occurred with as much readiness and energy, as if the nervous system had not been injured. 2d. Leaving the spinal marrow untouched, but having prevented the return to the heart of venous blood from the part in which the poison was inserted, no poisoning was perceptible. 3d. Tetanus occurs after the injection of the poison into the bronchiæ, with equal celerity, whether the eighth pair of nerves have been divided or not. 4th. Nux vomica, deposited in the thigh of an animal rendered paraplegic by the division of the spinal marrow, produced tetanus, not only in the trunk and superior extremities, but also in the palsied parts. 5th. The same effects are produced, whatever be the situation in which the poison is deposited, whether the abdomen, thorax, cellular tissue of the back, the veins, or bronchiæ: palsied parts are, therefore, subject to the action of the poison, as well as those which still retain their nervous relations; the contraction of the palsied muscles is slower, however, and seems not to take place, except as the blood brings the poison in contact with the nerves which animate them. 6th. Having injected the poison into the crural artery of a paraplegic animal, similar results occurred; the convulsions took place first in the muscles of the thigh, and only became manifest in the system generally, after an interval supposed sufficient to permit the poison to reach, by means of the circulation, the spinal marrow. From these experiments, Mr.

Segalas concludes, that the muscles may, in certain cases, contract independently of the action of the cerebro-spinal system—a conclusion, long since attained by Haller, and manifestly a consequence of the vis insita, as contradistinguished from the vis nervosa. Mr. Segalas compliments Fouquier, as having been inspired, when he proposed the employment of nux vomica in palsy.—*Bulletin, Sept.* 1826.

10. *Pulmonary Exhalation.*—MM. Breschet and Milne Edwards have made experiments on pulmonary exhalation, the results of which were communicated to the Royal Academy of Medicine, July 25, 1826, and published in the Revue Medicale for September. Magendie and Nysten had demonstrated the celerity with which various gaseous and liquid matters, placed in the circulation, are expelled by the exhalants of the lungs. The experiments of Messrs. Breschet and Edwards tend to explain this phenomenon. Barry showed, that absorption was prevented, in his experiments, by the action of cupping glasses, (vide vol. i. p. 447, of this work;) and Messrs. B. and E. considering exhalation to be the inverse operation, inferred, that exhalation would be accelerated and facilitated, by every force which should attract the fluids from within, outwards. Inspiration might be this force, and to test it, the following experiments were instituted. A tube was adapted to the trachea of an animal, and the thorax being freely opened, respiration was sustained by a bellows, fitted into the tube; the pressure of the atmosphere in such a case must be always equal on every part of the pulmonic surfaces. Camphorated alcohol being now injected into the peritoneal sac, did not appear in the pulmonary exhalation; while, in comparative experiments on animals with the respiratory organs untouched, it appeared in from three to six minutes. They next exposed a portion of an abdominal muscle, and applying to it an exhausted cup, the surface soon communicated the smell of camphor. Into the crural veins of two dogs, one breathing naturally, the other artificially, as in the last case, they injected essential oil of turpentine. In the sound dog, the pulmonary perspiration soon evinced the presence of the turpentine; and upon dissection, after death, the lungs were more fully impregnated with it than the other organs: while, in the wounded dog, no appearance of turpentine was presented in the pulmonary exhalation, nor did the lungs, after death, show any particular accumulation of the oil in their tissue—all the tissues being equally impregnated. When phosphorus, dissolved in oil, was injected into the crural vein of a dog breathing by the same artificial method, it was detected in the exhalation of the lungs, but was not detected by a cup exhausted over the stomach. This contradiction was explained on the ground assumed by Magendie, namely, that fat oil cannot permeate the finer ramifications of the pulmonary artery, and must consequently be arrested in the lungs.

Messrs. B. and E. also ascertained, that every part of the cutaneous superficies is not equally capable of yielding, under a cup, the odours of substances injected into the body. The skin of the thigh is not as much so as that on the region of the stomach.

From all the foregoing, arises the inference, that the suction force of the thorax, during inspiration, is the cause of the exhalation by the lungs, of such liquid and gaseous matters, as are mingled with the blood, by accident or design.

Independent of the insurmountable difficulty opposed to Barry's theory, by the phenomenon of fœtal circulation, we cannot conceive how such a suction power can be thought necessary; inasmuch as the circulation goes on in fishes that do not breathe by lungs, but whose whole circulation is carried on by means of a single auricle and ventricle, which first drive the blood through a decreasing series of vessels in the gills, and subsequently to the whole body, by an increasing series to arteries—next, a decreasing

series of capillaries, to another increasing series of veins. Here, then, a function is carried on, with as much exactness as in a human body, and no apparatus of suction is discoverable, or necessary. We need hardly cite against Mr. Barry, the Syracusan diver, whose power of holding the breath is wholly incompatible with the doctrine of this suction power. The circulation, as well as respiration, must be supposed to cease in this diver, when under the whirlpools of Scylla and Charybdis.

11. *Dr. Dill on Cutaneous Absorption.*—Dr. Dill's paper is in the Medical and Chirurgical Transactions of Edinburgh, vol. ii., and is noticed in the London Medical and Physical Journal, November, 1826. A young man, weighing 142 pounds, 5 ounces and 2 drachms, descended into a bath at 86°: remaining in it half an hour, he was again weighed, and had gained half a drachm. The expenditure which his body was hourly sustaining before the experiment, was two ounces and a half; he therefore gained in the bath ten drachms and a half in half an hour. Dr. Dill accounts for this difference by supposing a cutaneous absorption; our readers, however, will judge whether it was owing to the imbibition of fluid by the cutaneous surface, or to the interruption of the exhalations by the action of the bath.

12. *On the appearance, in the Urine, of Matters taken into the Stomach.*—J. A. Stehberger, under the direction of M. Tiedemann, has made some experiments to ascertain how soon substances taken into the body, may be detected in the urine. The subject of his experiments was a lad thirteen years of age, afflicted with congenital prolapsus vesicæ. The urine was always oozing from the exposed orifice of the ureters, and was collected from time to time, in order to test its contents. Among the substances swallowed, and subsequently detected in the urine, were the colouring matter of rhubarb, that of black cherries, madder, campeachy wood, indigo, gallic acid, tannin of the uva ursi, hydrocyanite of potassa and iron, a constituent part of the elder conserve, which gave the excretion an intensely yellow colour.

The colouring matter of tincture of turnsole, the bitter principle of quassia, the ferruginous tincture of Bestuscheff, and acetate of protoxide of iron, could not be detected in the urine, after being swallowed by the young man.

None of the substances employed as baths appeared in the urine, except essence of turpentine and acetate of potassa; but essence of turpentine communicated to it a violet odour on simple inhalation of its vapour. Neither the aqueous nor spirituous tincture of rhubarb, decoction of campeachy wood, nor solution of gallic acid, appeared in the urine when used as baths.

Madder showed itself in fifteen minutes after being swallowed; indigo in fifteen; gallic acid, twenty; decoction of campeachy wood, twenty-five; colouring principle of myrtle berries in thirty; that of black cherries, forty-five; the astringent principle of uva ursi in forty-five; pulp of cassia, fifty-five; ferruginous hydrocyanite, sixty; and the elder conserve in seventy-five minutes. The author says, that the time of the appearance of an ingested substance in the bladder may vary according to the state of the alimentary canal, the solubility of it in the digestive fluids, &c.

The inhaled vapour of essence of turpentine is manifested in the urine in fifteen minutes, while the odour of violets was not observable till twenty-five minutes after the application of the same substance to the skin.

There was found a period of return or increase, as to the quantity contained in the urine, of colouring or other matter swallowed. This point of time varied considerably: for example, the madder originally was detected in fifteen minutes, then diminished in quantity, but the period for its return was one hour; the black cherries one hour and a half, &c.

The complete disappearance of these matters was also of various epochs. The hydrocyanite of potassa was gone in three-quarters of an hour; indigo, four hours and a half; rhubarb, six hours, ten minutes, &c. These experiments are highly interesting, as from the peculiar state of the unfortunate subject, great accuracy as to time was attainable; the urine could be tested every half minute after the ingestion, if necessary. They serve to show the importance of the kidneys as the guardians, in a great measure, of the blood's purity and usefulness.—*Bulletin, Oct.* 1826.

13. *Sight given to a Person born Blind.*—We regret that we cannot copy out the whole of Mr. JAMES WARDROP's detail of the phenomena which occurred in a lady forty-six years of age, to whom he gave sight by means of three operations for artificial pupil, with which operations, however, we have nothing to do in this place. She was so blind as to be unable to point out the situation of the windows in a light room, but in the sunshine she could tell in what direction the light came. Among other relations of the progress of this lady in seeing, we shall quote the following:

"On the seventh day (after the last operation) she took notice of the mistress of the house, and observed, 'that she was tall.' She asked 'what the colour of her gown was?' to which she was answered, 'that it was blue.' 'So is that thing on your head,' she then observed, which was the case; 'and your handkerchief, that is a different colour,' which was also correct. The tea-cups and saucers underwent an examination: 'what are they like?' her brother asked her: 'I don't know,' she replied, 'they look very queer to me; but I can tell what they are in a minute, when I touch them.'

"On the twelfth day she was advised to walk out, which recommendation pleased her much. Her brother walked with her as her guide, and took her twice round the piazzas of Covent Garden. She appeared much surprised, but apparently delighted; the clear blue sky first attracted her notice, and she said, 'it is the prettiest thing I have ever seen yet, and equally pretty every time I look at it.'

"Nothing particular took place on the seventeenth day; and when her brother asked her how she was, she replied, 'I am well, and see better; but don't tease me with too many questions till I have learned a little better to make use of my eye. All that I can say is, that I am sure, from what I do see, that a great change has taken place; but I cannot describe what I feel.'"

Mr. WARDROP attempted to ascertain, by a few experiments, her precise notions of the colour, size, forms, position, motions and distances of external objects—as she had but one eye, nothing could be learned as to double vision.

When pieces of paper, one and a half inch square, differently coloured, were presented to her, she not only distinguished them, but preferred some to others. When desirous of examining an object, she could not at once find its position, but moved her hand as well as her eye, in various directions, like one groping in the dark. On asking what she meant by different forms, such as long, round and square, and desiring her to draw with her finger these forms on her other hand, and then presenting to her eye the respective forms, she pointed to them exactly; she not only distinguished small from large objects, but knew what was meant by above and below; to prove which, a figure drawn with ink was placed before her eye, having one end broad and the other narrow, and she saw the positions as they really were, and *not inverted*. She could also perceive motions: a glass of water was placed on a table, she approached her hand to it, and when it was quickly moved to a greater distance, she immediately said, "you move it—you take it away."

She seemed to have the greatest difficulty in finding out the distance of

any object, for when held close to her eye, she searched for it by stretching out her hand far beyond its position, while, on other occasions, she groped near her face for a distant object.

When a silver pencil case and a key were put in her hands, she knew the one from the other readily; but when placed side by side on the table, though she distinguished two objects, she could not tell which was the key. —*Lond. Med. Rep. Dec.* 1826.

14. *Pulmonary Insufflation, as a remedy for Asphyxia.*—Mr. LEROY D'ETIOLE has lately been making experiments on pulmonary insufflation, which, instead of resuscitating an animal in a state of asphyxia, may become the cause of its death, if improperly used. His experiments were tried on rabbits and dogs, and subsequently on sheep, as being of a size better fitted to show a correct and comparative result. When the trachea was exposed, a ligature was passed behind it; a canula being then introduced into its cavity, by an incision, the ligature was drawn. M. D'E. then blew, with his own breath, strongly into the lungs of the animal, only once. The canula being withdrawn, the animal was put on its feet. The experiment was tried on seven sheep: four were seized with suffocation in one minute, and died in three minutes; in the other three, the breathing became panting, and the animals died in a quarter of an hour.

The only explanation which can be given of this result, is, that the force which was sufficient to inflate the lungs of the sheep artificially, was strong enough to produce rupture, or preternatural enlargement, of the air cells. The inferences of a practical nature, relate to the treatment of submersion and asphyxia, from a variety of causes, particularly in new-born children.

M. SEGALAS, also, addressed a letter to the Academy, concerning M. LEROY D'ETIOLE's researches, above mentioned. M. S. cites experiments of his own, which demonstrate that the energetic poisons, such as brucia, strychnia, camphor, and spirituous tincture of nux vomica, do not, as heretofore supposed, produce death by asphyxia, but in another manner, probably by a special action on the nervous system. An evident proof of this, exists in the suddenness of death in such as perish by the poisons, which is remarkably great; while those which die by strangulation, no matter how complete, yet are more slowly deprived of vitality. In such cases, then, insufflation of air can be of no use, says M. SEGALAS. We cannot, however, agree with him: it would be manifestly the duty of the physician to use insufflation, even in such cases, since he could never ascertain, à priori, the extent of the nervous affection; a patient might die for want of one single inspiration, which could restore the functions of these very organs, in *some cases.*—*Rev. Med. Oct.* 1826.

15. *Engelhart on the Colouring Matter of the Blood.*—We are indebted to the Edinburgh Medical and Surgical Journal, for the facts in this article, of which we have altered much of the language, for the sake of condensation.

DR. ENGELHART'S observations are contained in his essay, which obtained the Gottingen prize for 1825, and seems to have put for ever at rest, the question, as to the existence of iron in the blood; though doubts may still be entertained, as to its being the cause of redness in the red particles.

FRACASSATI, in 1667, and MAYOW, in 1674, learned by experiment, that the difference between venous and arterial blood, was owing to the contact of air. BADIA, an Italian, appears to have been the first who detected iron in it: MENGHINI confirmed his observations, and remarked, that the quantity of iron in the blood was proportional to that of the red particles. Being at first satisfied with learning that iron gave colour to the blood, they did not care to know what form of that metal existed in the vital fluid; till, in consequence of the labours of SAGE and GREEN, they inferred, that it ex-

isted as phosphate, and, finally, that it was kept in solution by the free alkali of the blood.

Physiologists have for the most part held this doctrine, with some modifications, as, for example, that since protophosphate of iron has been detected in lymph and chyle, (a colourless salt,) it was inferred, that in blood it becomes the real perphosphate.

Berzelius found no iron, after incineration of serum and fibrine; but the ashes of the red particles consist chiefly of oxide of iron, equal to about 0.200 of the original mass.

Dr. Engelhart drained the clot on bibulous paper, diffused the colouring particles in water, which was evaporated by a heat of 122°; as they still retained some serum, he purified them by adding water, and the colouring particles fell down, coagulated as brown flocks, at a temperature of 149°; whereas serum will not coagulate for a less temperature than 167°.

The colouring particles thus procured, have lost their bright red colour, and form, when half dried, a brownish red, granular, friable mass; and when thoroughly dried, at a temperature between 167° and 190°, the mass is tough, hard, brilliant, black with reflected, garnet red with transmitted, light. It is quite insoluble in water. The mineral acids dissolve a small portion of it; while the *caustic* alkalies, with the aid of heat, dissolve it entirely, and acquire a deep blood red colour. With respect to the action of re-agents on them, two new facts have been noticed by Dr. Engelman: 1st. Phosphoric acid does not alter their colour in solution, any more than it can dissolve the modified colouring matter in the solid state. 2d. Acetate and sulphate of zinc throw down, even from diluted solutions, a dark, red precipitate, which, like the common colouring particles, becomes florid, on exposure to air.

By several processes, of which we have no room to give the details, he established the fact, that iron exists only in the red particles. There is one, however, which we cannot pass over: A stream of chlorine, transmitted through a solution of the colouring particles, destroys their colour, throws down white flocks, and leaves a transparent solution. In this solution, all the usual re-agents demonstrate the existence of a considerable quantity of iron, and some lime. Fibrine and serum show no such results. The chlorine seemed to separate all the fixed elements of the principles; for the insoluble matter thrown down, was always consumed *entirely* by incineration.

From 772 grs. of ox's blood, he obtained 3,80 of oxide of iron, which equals 0,492 per cent. Sow's blood, by a different process, yielded 0,526 per cent.

Our readers may judge, whether so small a proportion of iron as one half of one per cent., can be supposed capable of communicating so intense a red as that of the blood; or explain the various phenomena of colour, in different stages and states of the circulation.

III. PATHOLOGY.

We have somewhat enlarged our article on pathology; considering this branch, as it undoubtedly is, the basis of all sound medical practice. One peculiarity in our summary may probably be the circumstance, that a very large portion, indeed, is compiled from the writings of the French physicians. This arises simply from the fact, that these writers supply us with the greatest part of all that is new and valuable on this subject. The French has now become exactly what the Latin formerly was, the medical

language of the age; and access to its stores is now absolutely necessary to every one who would keep pace with the spirit of the times. Most of the valuable British practical and doctrinal works, which have been produced within the last few years, are found, by those who consult the originals, to have drawn a very large part of their useful matter from the writings of the continental physicians; and the language of BICHAT, in addition, furnishes us with a key, of extensive and convenient application, to many of the most valuable treasures of Italy and Germany—a key rendered the more necessary by the incomprehensible difficulty which we experience in obtaining the productions of those countries themselves.

Another character of modern pathology, is, the great abundance, perhaps predominance, among the new inquiries at present going on, of morbid dissections. Censures are sometimes heard, cast upon the pathological anatomists, for giving too much time and attention to that which terminates life, instead of the curative means which are to prolong it; but it is hardly necessary to revert to the peculiar character of certainty and fact, attributable to this mode of increasing medical knowledge. In the detail of symptoms, so much depends on the judgment of the practitioner, that incalculable scope is left for differences of opinion, upon even very ordinary cases; but in the appearances of a dead body, when carefully inspected by good anatomists, and men who have accustomed themselves to these investigations, there is much more certainty, and much more uniformity of opinions. Those physicians who the most feel and lament the want of certainty in medicine, are precisely the oldest and most experienced. To reject any means of acquiring knowledge, which may render us more capable of discharging the duties of a very responsible profession, is matter for serious condemnation; but still more to be blamed is he, who rejects, for estimation and conjecture, a large mass of the most certain and positive knowledge which is granted to light us through such a dark and tangled maze as the practice of medicine.

16. *Erosion of the Stomach.*—This occurrence, similar to that described by Mr. JOHN HUNTER, as owing to the stomach digesting its own substance after death, is well known to have been referred by the modern pathological anatomists to a diseased process, generally to the *softening* of this viscus, lately described by Messrs. JŒGER, FLEISCHMANN, LALLEMAND, CRUVEILHIER, LOUIS, &c. and, appearing to be the same alteration observed by ROEDERER, WAGLER, &c. and BROUSSAIS. Dr. PITSCHAAFT has described this disease, as occurring in *infants*, (vide RUST's Magazine, quoted in the Edinburgh Journal,) and his observations are the more valuable, as those of the French writers are less full in the symptoms, than in the morbid appearances after death.

It only occurs in the children of unhealthy mothers; in those fed too soon, or too much, by hand; and in those whose minds are precocious. The symptoms are, paleness of the countenance; coldness of the skin, with occasional flushes; dulness; and, occasionally, flaccidity of the muscles: then, loss of appetite, excessive thirst, lips dry and swelled, tongue dry and cracked. By this time, the child vomits all his food; the alvine discharges become frequent and loose, and seem to consist of half-digested aliment and slimy matter, like bookbinder's paste with shreds of spinach in it. He is constantly in a lethargic state, from which, however, he is roused by the slightest touch; and his senses continue active to the last. The countenance, when the disease is fully formed, expresses pain, but not of the acute kind; there is a sorrowful appearance about the mouth, the look is languishing, the eye half open, the pupil turned upwards during sleep, and the whole physiognomy resembles that of an old person—apparently, the

look of a "little, old man," the "petit vieillard" of the French physicians, an appearance often strikingly impressed on the minds of nurses, in the chronic abdominal complaints of children. The little patient affected with softening of the stomach whines frequently, and is so fretful, as to cry, and toss himself impatiently about, when a bystander looks steadily upon him. The pulse is at first slow and intermitting, and does not become quick till near the close; frequently there is a slight cough, or an erysipelatous affection of the eyelids; the respiration is not much affected at first, but becomes laborious towards the end; the abdomen is rarely much swollen; the urine is very often diminished in quantity.

Dr. P. found the mineral acids useful; but, more recently, has resorted to pyroligneous acid, combined with eight parts of syrup, and sixteen of orange-flower water. The food should consist of barley-water, sweetened with sugar, and used in small quantities at a time.

The Edinburgh analyst remarks, that the above harmonizes well with the descriptions given by Dr. GAIRDNER, of that city, in the Edinburgh Medico-Chirurgical Transactions; but doubts whether a certain diagnosis may be obtained from them.

On the other hand, Dr. BRETONNEAU, of Tours, in his elaborate work on the disease noticed in our second volume, p. 161, under the designation of *dothinentery*, or pustular or furuncular inflammation of the intestines, as well as Messrs. TROUSSEAU and RIGOT, whose attention was attracted to the subject by the perusal of the work just named, have all of them observed this softening of the stomach in the bodies of dogs killed during perfect health. Dr. B. has published a large number of instances in his work as above; and Messrs. T. and R. suggest that we cannot always ascribe to an inflammatory cause the softening found in the mucous membranes of subjects, "particularly," they add, "in infants, whose digestive powers are so active." (Vide Archives, Nov. 1826. p. 345.) This accession of force will be welcomed by those who still advocate the digestive powers of the gastric liquids, and the correctness, in this point, of the observations and judgment of the venerable HUNTER.

17. *Redness of the Mucous Membranes from Settling of the Blood.*—The gentlemen just named have made a considerable series of experiments on dogs and horses, for the purpose of ascertaining the distinctive signs of inflammatory redness, and of that produced by the gravitation of blood. This course they are continuing; but, in the meanwhile, conceive that they have established, in a satisfactory manner, the following propositions; which, as will be seen, by no means accord with a rule, frequently inculcated by the disciples of Dr. BROUSSAIS, that the redness produced by the settling of blood, is confined to the larger vessels:

1. That the *arborescent* injection, that is, the sanguineous redness which occupies, according to the difference of cases, the trunks, the trunks and branches, or the trunks, branches, and twigs (ramuscules) of the mesenteric veins, is the invariable result of the *stasis* of the blood in the depending portions of the digestive tube.

2. That, most frequently, the injection does not extend beyond the venous twigs, in the bodies of healthy individuals.

3. That, frequently, in those who have sunk under an acute disease, if they have not been freely bled, the trunks, branches, and twigs of the veins, and also the villosities themselves, are injected, although there has not existed an inflammation of the intestines.

4. That, sometimes, the blood not only distends, at the same time, both the trunks, branches, and twigs of the veins, and colours the villi, but transudes through the mucous surface itself, although there has not been

any inflammation of the intestine; and this by the simple stasis of the blood in the dependent parts.

The same facts are alleged of the stomach, and the great intestine; though they are here far less conspicuous.

Messrs. T. and R. conceive, that in many of the cases in which, upon the principles of the school of Dr. Broussais, a gastro-enteritis has been found to complicate a previously existing disease, the redness produced by the settling of the blood has been mistaken for the result of a genuine inflammation.

18. *The Duke of Holstein—Oldenberg's prize questions on Yellow Fever.*—These have been announced, and adjudged. The final decision was, as was foreseen, in favour of contagion—exactly what was to be expected in that latitude and longitude. Eighteen answers were presented; six in German, four in French, seven in English, and one in Latin. Three of the English replies came from the United States. We obtain our information from the last number of the Edinburgh Medical and Surgical Journal. The prize was adjudged to one of the German tracts by Dr. Charles Christian Matthæi, of Verden, near Bremen, court physician to the king of Hanover.

Dr. Matthæi furnishes tables, exhibiting an ample comparison of the characteristics of the disease as existing in the West Indies, North America, and the south of Europe; "the most important quotations from *all the authors* who have written upon the subject;" an alphabetical catalogue of all the writers to this purpose; an alphabetical enumeration of all the epidemics of the yellow fever, and another of all the places at which it has been observed; and lastly, maps, "giving an easy view of the propagation of the epidemics in the two hemispheres."

He believes that "the yellow fever appears as a disease sui generis, endemical only in the low countries of the sea coast, but, in a due concurrence of circumstances, *also sporadic* in other places;" that it has "never made its appearance beyond 48° northern latitude, and that a temperature of 72° F. is necessary for its production and propagation;" that it is possible for it to prevail in the north of Germany; that it is liable to generate other malignant diseases, and that the ordinary system of quarantine is the proper resource against it.

Dr. Matthæi's motto is, "*Opinionum commenta delet dies, naturæ judicia confirmat;*" and we are willing to peril the cause of non-contagion upon the principle which he here challenges. Yet the author should recollect, what he cannot but feel, that there are countries where the effect of time on public opinion is slow; and that this must be peculiarly liable to be the case in countries where these questions are incapable of being subjected to the test of actual eye-sight.

The names of the professors at Berlin, who adjudged the prize, as learned a body, we do not doubt, as any in the world, and as competent, did there not exist men who have seen for themselves, are Link, Berendo, Græfe, Knappe, Hufeland, Rudolphi, Horn, Henkel, Siebold, Wolfart.

19. *Jackson on Irritation.*—Our townsman, Dr. Samuel Jackson, has published, in our esteemed contemporary, the Philadelphia Journal, a paper which he had previously read, as a lecture, before the Medical Society of this city, containing a view of the modern doctrine of irritation. Dr. J. may be considered as an entire convert to the views entertained on this point by Dr. Broussais, and his disciples; not undertaking to model them anew in any essential respect, but merely to make occasional extensions and explanations, illustrations from the experience of himself and his friends, and alterations of some of the minor points. His paper may, we think, be considered as a fair setting forth of this beautiful system; and we cannot for a mo-

ment hesitate to express our pleasure, that he has thus laid it before a large part of the medical public.

The paper in question is rather explanatory than argumentative; but this arises in part from the nature of the doctrine to be set forth. We regard the latter as a beautiful theory and terminology; answering, in an admirable degree, that great purpose of medical doctrines, the classification of facts, and the ready presentation of strong analogies, where direct inductions are not to be had. It strongly resembles, in these respects, the body of chemical doctrine promulgated by LAVOISIER, or that more recent production of our own times, the *atomic* theory. It meets a prodigious variety of cases, solves, or at least defines, a great number of difficulties, and forms, we believe, an aid to the medical practitioner, with which, in the present state of science, he is not entitled to dispense.

Dr. J. remarks the confusion existing among writers with regard to the meaning of the term "irritation." Impressed with the necessity of fixing it, he does not enter into the inquiry to which of all its senses it ought to be confined, but assumes it at once to mean "an excess of the natural actions, destructive of the function of the tissue or organ, in which it exists." To this destruction we object, as not a necessary condition.

Function may be *deranged* by a state of things in which there is a diminution, or one in which there exists an excess, in the amount of the circulating fluid. *Ubi stimulatio, ibi fluxus.* Irritation is an increment of the natural, organic actions of the part in which it occurs, accompanied with increase of the circulatory fluids, and deranging (Dr. J. says incompatible with) their functions. This increase of *fluids*, and of *vital forces*, in one part of the body, gives rise to a corresponding diminution in others: hence, irritation can never be general, but always leaves some parts of the body in a state of asthenia.

Irritation may also be confined to a tissue; and is very apt in this manner to spread through the body, the different parts of the same structure having a strong tendency to sympathize with each other. Dr. JACKSON follows BEGIN in referring irritation to three general heads, or classes: sanguine, lymphatic, and nervous. Sanguine irritation may be—1. Secretory, or evacuative, 2. Congestive, 3. Gaseous, (meaning with a tendency to secrete gas, as in intestinal and peritoneal tympanitis, in a rare case of idiopathic emphysema from cold, narrated by himself, in gaseous secretion of the uterus, &c.) 4. Hæmorrhagic, 5. Common inflammatory, 6. Hypertrophic, and 7. Atrophic. Lymphatic irritation, the *sub-inflammation* of M. BROUSSAIS, is that process which forms tubercles, cancer, melanosis, common glandular enlargements, &c. Dr. J. appears to us to have confused the lymphatics with the ordinary white capillaries; an error into which he may have been led by M. BEGIN, who does not always clearly distinguish between them. The *lymphatics*, as we know them, are always found employed in conveying certain materials towards the heart; while those capillaries which perform the nutrition of the white and exanguious portions of the body, (cartilages, tunica conjunctiva, cornea, &c.) and in which would appear to be seated the irritative operations productive of tubercles, cancers, scrofulous tumours, &c. have an entirely different office, and, it is fair to presume, a different nature. As, however, these last seem to be principally concerned in the diseased changes incident to the lymphatic glands, and as both of them are commonly associated together in the common predominance or deficiency which characterizes certain *temperaments*, it is not uncommon with pathologists, though certainly incorrect, to confuse them.

Nervous irritation, on the other hand, is of a totally different kind; depending on the peculiar laws and modes of operation of the system in which it is situated. The nervous system is not a unit; but consists of

various organs and apparatuses, each having peculiar functions assigned to it.

Dr. J. considers the cerebro-spinal medulla as the common centre of the nervous system of relation and the ganglionic system, the point to which impressions are transmitted, and from which they are reflected upon the various parts of the economy. He does not seem to attach much importance to those most abundant communications established between the different viscera by the ganglionic nerves, to which the hypothesis of the intervention of the brain is entirely unnecessary. Nervous irritation may be, and often is, confined to a single organ, and gives rise to a great diversity of symptoms according to the great differences of these local situations, on which neither Dr. J. nor ourselves have space to dilate.

The paper breaks off somewhat abruptly, promising to continue on the *laws* of irritation.

20. *Apoplexy of the Lungs.*—M. BOUILLAUD, adjunct member of the Royal Academy of Medicine, has published two cases of this hitherto but imperfectly known disease. Apoplexy of the lungs was first well described by LAENNEC; who gives, as its leading diagnostics by the stethoscope, a mucous rattle, apparently produced by large bubbles of air, traversing a fluid in the bronchiæ, and frequently bursting; and the suspension of all the sounds of respiration, as presented by the stethoscope, in a small portion of the lungs. M. BOUILLAUD remarks, that the rattle only proves the presence of a fluid in the air-passages, and not the nature of that fluid; and that it can furnish no evidence of the existence of apoplexy of the lungs, unless by combination with other characteristic signs; and with regard to the second diagnostic character, one of his cases distinctly exhibited the rattle produced by respiration, in a case of very considerable local extent, over the whole surface of the lungs.

From these observations, the author concludes, that the diagnosis of this disease must still be considered as very imperfect, the stethoscope not having removed the imperfection which existed in our previous means of discrimination, (hæmoptysis, oppression of respiration, coldness of the extremities, &c.)

M. BOUILLAUD's cases, also, differed from the observations and the two records given by M. LAENNEC, in the fact that the disease, in one of them, extended through a large portion of the lungs, instead of being confined, according to the experience of the latter pathologist, to a cube of from one to four inches in length; and in the circumstance, that, in the other subject, the effused blood was found enveloped in a cyst, composed of a substance analogous to inflammatory lymph.

21. *Purulent Ophthalmia of Infants.*—Dr. F. A. AMMON has published a monograph on the anatomico-pathologic condition of the globe and membranes of the eye in the ophthalmia of young infants. In this disease, there is a great congestion of blood in the internal parts of the eye, which sometimes almost amounts to inflammation. The exterior parts of the globe presented precisely the same aspect as the contagious ophthalmia,—a new proof as to the identity of these two diseases.

22. *Hæmoptysis from Worms.*—Dr. DAULIOULLE has contributed to the Marseilles Society the narrative of a case of hæmoptysis which twice returned after the most active treatment by the usual remedies. Nevertheless, during the third attempt to remove the disease, the patient vomited a large lumbricus; on which calomel, male fern, camphor, and injections, were administered, with the effect of evacuating a dozen more of these animals, and of producing a permanent cure.

23. *Phthisis Pulmonalis.*—M. ANDRAL has turned his attention to the nature of pulmonary tubercles, and gives the result of some observations made in the wards of M. LERMINIER, one of the physicians of La Charité. He

concludes, that tubercles of the lungs are the product of a morbid secretion; and that it consequently seems improper to designate them, as is frequently done, under the appellation of tissue, as they have none of the anatomical characters of a tissue. In this he agrees with M. CRUVEILHIER; who considers tubercles the result of irritation in the vesicles of the lungs. M. ANDRAL considers the morbid process which precedes the tuberculous secretion, to be an active, sanguineous congestion, similar to that which precedes every secretory process, whether regular or irregular; but it is not necessarily a pneumonia, in the ordinary sense of that term.

This secretion may take place indifferently in several of the tissues which enter into the composition of the lungs; and the opinion, that the exclusive cause of tubercles is an inflammation of the white vessels, and that their exclusive seat is in these vessels and their ganglions, is in opposition to many well-established facts.

The *pulmonary granulations* of BAYLE are not, as he supposes, tubercles in a nascent state. These minute substances are red and soft, before they become gray and hard; their granulated aspect is an effect artificially produced when the pulmonary lobules are cut or torn; and, far from being a new production, they are constituted by portions of lobules separately inflamed.

In many cases, in which patients have died during abundant hæmoptysis, M. ANDRAL has not been able to recognize any other source of the expectorated blood than the mucous membrane; but in all the cases which he examined, with but one exception, there were also tubercles in the lungs. In that one instance, the patient seemed to have died in consequence of sanguineous exhalation from the bronchial surface. In these cases, the bronchial membrane presents no other læsions than those which are seen in cases of simple bronchitis; and sometimes it is pale, or, at most, has a slight rose-coloured tint. When the hæmorrhage has its source in the parenchyma of the lungs, those læsions are formed, which M. LAENNEC describes under the head of *pulmonary apoplexy*. Vide that article on the preceding page of this Quarterly Summary. Other inferences are expressed in the aphoristic form, as follows:

Many individuals have had abundant spitting of blood, and yet have not become phthisical.

In others, the first appearance of blood in the expectoration has preceded, by many years, the first appearance of phthisical symptoms.

In other cases, the first hæmoptysis has been immediately followed by all the symptoms which indicate the existence of pulmonary tubercles.

Many patients are not attacked with hæmoptysis, until after the tubercles in their lungs have acquired a considerable development, and phthisis is already far advanced.

It is not uncommon to see the tuberculous affection of the lungs go through all its periods, and death take place, without the least hæmoptysis being ever observed.

Chronic laryngitis, like acute laryngitis, may exist in an idiopathic form; but it is only in very rare cases that it can by itself give rise to the symptoms of consumption. *Laryngeal phthisis* is therefore not at all a common occurrence.

In the greater part of the cases in which the symptoms of phthisis are accompanied by an affection of the larynx, those symptoms are to be referred to tubercles developed in the lungs, whether the tubercles have preceded or followed the laryngitis.

24. *Effect of Diet in Consumption.*—It is known, that considerable diversity of opinion exists among physicians, respecting the diet proper for phthisical patients. "At this moment," says an analyst in the London Re-

pository, to which we are indebted for the materials of this and the preceding articles, "there are practitioners in England, who confine their phthisical patients to vegetable and milk diet; and others, who give them animal food and wine, almost to the exclusion of vegetables." Some French pathologists now think, that vegetable food encourages the production of tubercles; and this opinion seems chiefly to be founded on the rare occurrence of tubercles in carnivorous animals, and its frequency in those which are herbivorous. M. HUZARD finds that tubercles are very common in cows; and M. SEGALAS suggests, that cows' milk may favour their development in the human body.

25. *Inflammation of the Glands of Peyer and Brunner. Dothinentery.*—Of this new species of enteritis, we gave some account, when speaking of the labours of Dr. BRETONNEAU, at p. 161, of our second volume. Dr. TROILLET, of Paris, nearly coincides with the former author in his main points. We have now an opportunity to record the same facts, as they appear to an English practitioner. Differently coloured spectacles have here been used; and the dothinentery, instead of the essential disease, producing general febrile symptoms by sympathy, as in other inflammations, has become a complication, taking place in the course of an *idiopathic* fever. Calomel is also found useful; so that the discovery stands now arrayed in a garb less foreign to American eyes.

Dr. HEWETT apprehends, that the inflammation of these mucous glands is owing to their orifices being obstructed by a dark, vitiated, and inspissated mucus; that they then swell, as the sebaceous follicles of the skin do in the acne punctata of Dr. BATEMAN. They may be seen in various stages, on dissection; at first having their inflammatory process confined to their own substance, then spreading to the adjacent glands, and by this time, or subsequently, to a small portion of the mucous membrane immediately surrounding their base, producing a slight redness and considerable thickening. The margins of the ulcers frequently appear, at least in the early stages, puckered, jagged, or fringed. The base of such ulcers often exhibits a rough, irregular surface, with little, projecting masses of enlarged or sloughing follicles; or presents a sloughy, ash-coloured appearance, resembling that of chancre; or displays a dirty, yellow hue, from the bilious-coloured, feculent matter adhering to it. The work of disorganization seems to be effected, partly by the ulcerative, partly by the sloughing process. The erosion extends gradually downwards, from the mucous to the muscular and peritoneal coats; sometimes, though rarely, perforating the latter, and then rapidly exciting extensive peritonitis, "by the escape of foreign matter into the cavity of the abdomen." This perforation of the peritoneal cavity is sometimes prevented by adhesions of the intestine to adjacent parts, through the effusion of coagulable lymph. The mesenteric glands corresponding to the seat of such ulcers, are generally found increased in size and vascularity; sometimes resembling, when cut into, the pulp of a morello, or even a red, cherry.

We are following JOHNSON'S Medico-Chirurgical Review, not having received the original. From the next passage it would appear, that Dr. HEWETT had confused ulceration of the *great intestines*, from a tropical dysentery, with this particular disease of the glands of PEYER and BRUNNER. Ulcers of the former kind are frequently demonstrated in our schools.

In most of the cases of "follicular ulceration, in idiopathic fever," the seat of the ulcers will be indicated, immediately on opening the abdomen, by small, opaque patches, of silvery whiteness, or by apparently attenuated spots, occurring in discoloured portions of the intestines. In some cases, however, there is no external indication sufficient to betray their presence.

Dr. HEWETT bears testimony, as numerous French physicians have done,

to the general accuracy of M. Bretonneau's descriptions of dothinentery—a malady, which some in this country appear to have taken for a joke; but we can assure them, that the accounts of it, transmitted from abroad, have every character of consistency and truth, notwithstanding it has received such a droll name.

Dr. Hewett, as we have already said, recommends "effective doses" of calomel. His theory of its operation is, that it benefits the disease, by compelling the evacuation, from the mouths of the follicles, of the inspissated mucus which is causing their inflammation. Our theory, on the other hand, is, that it produces its good effects upon precisely the same principles on which calomel, when not contra-indicated by extraneous circumstances, benefits every species and variety of inflammation or plethora within the abdomen, as well as those sympathetic complaints which depend upon such. At any rate, the practice is not at all repulsive to our American notions. The reviewer in Dr. Johnson's Journal states, with the rather free humour so prevalent in that publication, that if Dr. Broussais were to read the passage in which calomel is thus recommended, "it would make his hair stand on end, 'like quills upon the fretful porcupine;'" and that one of the school attached to that writer, would accuse the calomel of being a principal cause of the disease it was intended to prevent.

Dr. Hewett has published a series of cases of this affection, treated at St. George's Hospital. The practice hinged principally upon the application of leeches to the abdomen, and in the employment of aperient medicine, generally mercurial. Mercury was also usually given in the alterative manner. He divides the course of the disease into three stages, the distinctions of which, in the review, are not very clear to our apprehension. We take them to be, 1. the period of inflammation of the glands, not generally extending to the adjacent mucous membrane; 2. that of ulceration of the follicles, generally accompanied by some slight inflammation of the neighbouring exhalant surfaces; and, 3. that of sloughing, and of recovery, or of decline and death.

On treating the disease during the first period, by the "effective exhibition of calomel, combined with any other auxiliary purgative and sudorific," for the space of three or four days, the abdomen generally becomes less hard and prominent; but the purgation should not be left off till the belly feels soft and supple. This system being followed up five or six days, and the evacuations still continuing unhealthy, Dr. Hewett advises "the *purgation* to be slackened for a day or two," and a dose of *castor oil* given, "for the purpose of ascertaining whether the unhealthy character of the evacuations may not have been prolonged by the continued irritation of the purgative." (Is castor oil no purgative? Or is calomel so par eminence; as if it were not at least equally remarkable for other peculiarities?) Castor oil, under such circumstances, will often bring away natural, though liquid motions, and produce a subsidence of the abdomen.

In the second stage, leeches are to be repeatedly applied to the abdomen; while two or three grains of calomel, and the same quantity of James's powder, may be given every six hours, exhibiting, occasionally, small doses of castor oil. If the bowels are already relaxed, a quarter of a grain of opium, or three grains of extract of white poppy, may be added to the pills. The same measures may be pursued, even after follicular ulceration has been established, if the symptoms indicate local inflammation and febrile excitement.

IV. THERAPEUTICS, MATERIA MEDICA, AND THE PRACTICE OF MEDICINE.

26. *Influence of Broussais' Doctrines.*—As we have, from time to time, expressed in this Journal our decided conviction of the beneficial tendency of the medical doctrine, known under the title of *physiological*, and of which the founder is Dr. Broussais, of Paris, we deem it necessary to offer here a few remarks, (in justification of ourselves for entertaining this opinion,) on the assertions made in Europe, and repeated in this country, respecting the greater mortality in the practice of those who follow the precepts of Broussais, and particularly of this physician himself. These assertions are founded on a supposed authentic table of the mortality in the military hospital of Paris—the Val de Grace—which originally appeared in the Revue Médicale, a journal published at Paris, was afterwards copied in other periodicals of France, and, finally, adduced by M. Prus, in his Essay on Irritation and Inflammation, and by M. Miquel, in his *Lettres d un Médécin de Province*, as an unanswerable proof of the danger of treating diseases *physiologically*. We here insert the table, as we find it in the above mentioned works.

YEARS.	VAIDY.		DESGENETTES.		PIERRE.		BROUSSAIS.	
	Death.	Sick.	Death.	Sick.	Death.	Sick.	Death.	Sick.
1815	1 in	17	1 in	19	1 in	16	1 in	11
1816	1	24	1	22	1	25	1	19
1817	1	18	1	20	1	24	1	14
1818	1	15	1	16	1	20	1	12
1819	1	12	1	22	1	18	1	8

To this table M. Broussais immediately replied, denying its authenticity, and defying the author, or the editors of the Revue Médicale, to prove its correctness, or name those who had furnished the necessary documents for framing it. But as his answer was not deemed, in its turn, conclusive, and did not *prove*, by a detail of facts, the incorrectness of the table in question, the latter continued to be regarded by many as authentic, and made use of as a powerful argument by the opponents of the doctrine. Here, therefore, the thing remained, until M. Roche, a very intelligent physician of Paris, undertook the investigation of the subject. For this purpose, he was furnished by the administrators of the Val de Grace, and by Broussais, with all the documents in their possession. He appears to have laboured hard, in order to arrive at the truth; and has incorporated the results of his researches in an able and satisfactory answer to M. Miquel's jokes and lampoons on the new doctrine, published in the number of the Archives Générales for October, 1826.

In the first place, M. Roche observes, that the books containing the dates of entries and discharges, and diseases, in each ward, with the exception of those for the year 1819, were destroyed by the administrators, as soon as they were no longer of any use; consequently, it was impossible for him, except after much labour, and comparing documents with one another, to arrive at any truth on the subject. But even supposing that the mortality in M. Broussais' wards was greater, during those years, than the mortality in those of his colleagues, the circumstance is easily explained: for, whilst M. Broussais had only fever patients to prescribe for, MM. Vaidy and Pierre had, in 1819, a great number affected with the itch in their wards—one of which (No. 10) contained only prisoners, all of whom were on nearly full

allowance. The same kind of patients must have filled the wards attended by M. Pierre in 1816 and 1817, as his mortality during the first was only 1 in 193, and during the latter, 1 in 167. Nor does it appear less certain, that M. Vaidy's wards, in 1816 and 1818, contained many, as his mortality during those years was 1 in 27, and 1 in 21. M. Desgenettes, although at that time physician in chief, could not have the acute diseases alone, in his wards, though the fact has been asserted, for the deaths were only 1 in 78.

M. Vaidy visited during one month only, in the year 1819, and M. Desgenettes during four; whilst, on the contrary, M. Broussais visited during two-thirds of the year.

In 1816, M. Desgenettes visited during two, in 1817 during three, and in 1818 during one month; M. Pierre only visited during four months of 1815; whereas, during the same years, M. Broussais attended during the space of eight, nine, and ten months.

It is evident, that no one can, with any justice, compare the mortality of wards filled with patients affected with fever in all its grades, with that of wards containing few diseases besides the itch. When we recollect, also, that the mortality differs much in different seasons of the year, we shall find it impossible to compare with fairness, the results of a service of one or two months, to those of another service which continued two-thirds or three-fourths of a year, and probably during the most sickly seasons.

M. Roche further remarks, that as M. Broussais' wards are destined for the clinic, the worst patients are sent thither. His mortality, then, may easily be understood to be greater, without its being inferable from that, that he is not as successful as his colleagues. The convalescents are sent off to some of the other wards, in order to make room for other cases which are more necessary for clinical demonstration. But whilst this makes the mortality in M. Broussais' wards greater, it makes that in the wards of the other physicians smaller, as these convalescents are included among their patients in the calculation of deaths, and considered as cured by them. In 1819, 119 of these patents were sent out of M. Broussais' into some other wards, and in the table of mortality in question they are not included.

But, in proof the erroneousness of this report, we may state, that it mentions that, in 1815, M. Desgenettes lost 1 patient out of 19; whilst it is proved, that he did not serve during the whole of that year.

The following is the true table of mortality in the Val de Grace, during the years 1815, 16, 17, 18, 19, as well as could be made out from the official documents in the hands of the proper authorities of the establishment: M. Desgenettes lost in 1816, 1 in 78; in 1817, 1 in 14; in 1818, 1 in 12; in 1819, 1 in 21. M. Pierre lost in 1816, 1 in 193; in 1817, 1 in 167; in 1818, 1 in 27; in 1819, 1 in 14. M. Vaidy lost in 1815, 1 in 20½; in 1816, 1 in 27; in 1817, 1 in 14; in 1818, 1 in 23; in 1819, 1 in 22. M. Broussais lost in 1815, 1 in 9½; in 1817, 1 in 16; in 1818, 1 in 14; in 1819, 1 in 10.

The want of information relative to the proportion of the mortality in the wards of M. Pierre in 1815, and of M. Broussais in 1816, arises from the loss, already alluded to, of the official documents. By comparing this official table with that already quoted, as published in the Revue Médicale, it will be found, that not one single set of figures is correct in the latter. Independently of the reasons adduced to account for the greater mortality in M. Broussais' wards, it should be borne in mind, that during two months of his service in 1819, measles of a malignant character prevailed to a great extent among the troops forming the garrison of Paris. During this short period, 72 died; whilst, during the seven other months, only 39 perished in the same wards. During the whole of this epidemic, MM. Vaidy and Desgenettes did not attend; and M. Pierre was attending the

wards filled with itch, and with prisoners, and consequently could only see a limited number of bad cases.

The following is an hospital report of the mortality at the Val de Grace, from 1800 to 1820, by periods of five years; by which it is proved, that the proportion of deaths in that hospital has decreased in a very remarkable manner, since the introduction there of the physiological medicine.

From 1800 *to* 1804, *inclusive.*

Cures, 27,880—Deaths, 1,740—making 1 in 16 1-43d.

From 1805 *to* 1809, *inclusive.*

Cures, 26,249—Deaths, 2,401—making 1 in 10 15-16ths.

From 1810 *to* 1814, *inclusive.*

Cures, 38,355—Deaths, 5,976—making 1 in 9 4-5ths.

From 1815 *to* 1820, *inclusive.*

Cures, 31,803—Deaths, 1,132—making 1 in 28 1-20th.

The average duration of the treatment, also, from 1810 to 1814, was seventeen days; whereas, from that period to 1820, it has been reduced to fourteen days.

Extending next our researches to the other hospitals of France, and to one in Spain, attended by physicians following the precepts of the physiological school, we find, that at the military hospital of Rennes, under the care of Dr. RENNATI, during the course of 1825, 584 patients were treated, of which 521 were cured, and 14 died; making a proportion of about 2½ per cent. Of these also it appears, that one died before he arrived at the hospital, and another two hours after the visit of the physician. At the hospital of Pampelune, under the charge of Dr. DOMMANGEL, 772 patients were found there on the 1st January, 1825; during the course of the year, 1100 were admitted, of whom 1096 were cured, 3 died, and 773 were left at the time of writing the report. As the number found was equal to that left, we may divide the number admitted by that of the deaths, which gives 1 in 366—a very small portion, even supposing most of the diseases to have been of a very trifling nature. In the military hospital of Madrid, under Dr. FAURE, there were found, on the 1st of January, 1825, 117 patients; during the year, 1527 were admitted, making a total of 1644; of these, 1506 were cured, 48 died, and 90 were left at the hospital on the 1st of January, 1826. Deducting 27 from the number found, to make it equal the number left, and adding them to the number admitted, and dividing the whole of them, 1671, by the number of the deaths, we have left 1-34th part, or about 3 per cent.

In the second division of fever patients in the military hospital of Madrid, from the twenty-seventh of May to the first of July, 1823, 376 patients were admitted; of which 238 were cured, 8 died, and 130 were left. The mortality amounted, therefore, to 1 in 29 6-8ths. M. DUPONCHEL, physician in the army of Spain, remarks, that the troops arriving at Madrid, were worn out by the fatigue of long marches, and that many of the cases were of a very violent character. In the military hospital of the Island of Leon, (division of fevers,) during the months of September, October, and November, 1824, 28 patients were found, 154 entered, 151 were discharged cured, 7 died, and 24 were left; making a proportion of 1 death to 21 4-7th cases. Mr. DUPONCHEL remarks, that, as the season was that of the annual inspection, three of those who died, came in with chronic pneumonia, for which they were to be sent back to France.

In the military hospital of Rocroy, during the first quarter of 1825, 2 patients were found, 30 entered, 29 were discharged cured, 1 died, (chronic pneumonia,) and 2 were left. The mortality, therefore, was 1 in 29. In the military hospital of Longwy, from the first of May to the first of October, 1826, 23 patients were found, 67 were admitted, 83 were discharged

cured, 2 died, and 5 were left. Both of those who were marked dead, were brought lifeless to the hospital. One of them was killed in a duel, and the other was drowned. The mortality, therefore, instead of being as 1 to 41½, is reduced to nothing. The returns of these four mentioned hospitals, were furnished by the attending physician, M. Duponchel, and published in the Annales de la Médécine Physiologique. M. D. adds, that in the military hospital of Santa Maria, during the month of September, 1823, (during the hottest period of the season, and whilst the soldiers were exhausted with fatigue, on account of working at the trenches before Cadiz,) upwards of 500 patients were admitted, of whom only 16 died, or about 1 in 25.

In a note furnished to Dr. Broussais by Dr. Chervin, and written by Dr. Ferran, of Xeres, in Spain, it appears that he (Dr. F.) lost, by the old method, 50 0-0ths. of his yellow fever patients, whereas, since he adopted the new method, he has only lost a little more than 5 0-0ths. In the hospitals of Paris, on the contrary, in which physicians of a different school and who would shudder at the bare idea of being suspected to follow the theoretical or practical precepts of the new school, attend, things assume a very different aspect. It is true, that the kind of patients admitted in these establishments is very different from that by which the wards of a military hospital are filled,—consisting as it does of the poorest portion of the population, the outcast of society, whose constitutions are often broken down by disease and debauchery,—whilst soldiers are generally hearty, well fed and clothed. Yet the difference in the proportion of deaths is too great,—the trial has been made under circumstances too evidently different, as, for example, a quiet garrison duty or the fatigues of a campaign, not to justify us in the suspicion, that this difference depends on something more than a different condition of the patients in the two sorts of establishments. Thus, on investigation, it will be found, that M. Recamier, one of the physicians of the Hotel Dieu, lost, during the last quarter of 1824, 18 patients out of 135, being about one in eight. In the course of the year 1825, he lost 122 patients out of 707, being rather more than one-fifth. During the first quarter of 1826, 143 patients were treated by the same physician. Of these, 20 died, making about one in seven.

During the second quarter of the same year, 205 patients were treated. Of these, 32 died; being more than one-seventh. During the third quarter of the same year, this physician lost 14 out of 144 patients, making about one-tenth of the whole. M. Recamier's reports are drawn up by Mr. Martinet, and published in the Revue Médicale.

In the Hospital de la Pitié, M. Bailly lost, during the months of March, April, and May, 1825, 103 out of 573 patients, making about 1 in 5½.

At La Charité, Laennec lost, from the first of November, 1825, to the fifteenth of April, 1826, 37 out of 188 patients,—making, according to the reporter, 1 in 8 for acute, and 1 in 4 for chronic, diseases, or 1 in 5 for the whole. From the first of April to the twentieth of August, out of 168 he lost 18 patients—a little more than 1 in 10: and during the first solar quarter of the year 1825, out of 160 patients he lost 29; being a little less than one-fifth.

Other reports might be added, but we trust that enough has been said to show, that those who practice medicine agreeably to the "Doctrine Physiologique," do not lose more patients, than such as treat this doctrine with contempt, and seem to regard all the followers of Broussais as madcaps, fitter to inhabit the cells of a lunatic asylum than to engage in the practice of our noble profession.

Mr. CASTEL, in his work against the new doctrine, has brought forward necrological tables of the department of the Seine, to prove that the adoption of that doctrine in the practice of medicine, had caused an increase in the mortality of Paris.

From these tables it appears, that in 1817 there were 2000 deaths more than in 1816; but this difference could not be ascribed to the new doctrine, which was then in its infancy, and only began to count many proselytes in 1818. Laying aside 1817, therefore, we find that in 1816 there were 22,491 deaths—in 1819, 22,671—in 1820, 22,464—in 1821, 22,917—and in 1822, 23,282. The difference for the lowest number to the highest, is only 818, a difference too trifling to be entitled to attention.

Now, when, with these facts before us, we bear in mind the great increase in the population of Paris, from the influx of strangers, of inhabitants from the provinces, and of a large number of workmen, (of masons in particular—the number of whom is estimated at 60,000,) we shall be ready to conclude, that, so far from having increased the mortality, the new doctrine has caused it to diminish.

27. *On the Efficacy of the Spirits of Turpentine in Sciatica.*—In the November number of the Revue Médicale, which we have just received, M. PIORRY has published a case of femoro-popliteal neuralgia, in which the spirits of turpentine, exhibited internally, was found very efficacious. The disease was at first treated by means of antiphlogistics and lactucarium, but without any other benefit than a momentary respite from pain, and a little sleep. A blister was also tried, but the relief obtained from it was only of short duration. M. P. next prescribed a dram of the spirits of turpentine to be taken twice a day. The next day the pain was less severe, and on the fourth day was so far diminished as to induce the patient to imagine she was cured, and to get out of bed. Owing to this it returned; but in a few days, and by means of the same remedy, the patient was restored to perfect health. M. PIORRY remarks, that in this case the turpentine produced no other gastric symptom than a loss of appetite for a few days—a sensation of heat and weight in the stomach, and only once vomiting. It did not give rise to diarrhœa.

The spirits of turpentine used in this manner, was first, we believe, introduced in the treatment of sciatica by M. MARTINET, of Paris, and has since been employed very efficaciously by several of our Gallic brethren.

28. *Belladonna and Nitrate of Silver in Epilepsy.*—In one of the numbers of FERRUSAC's Bulletin, (November, 1826,) we find the following remarks on epilepsy, by Dr. TOEL, of Aurich, extracted from a German journal. After stating that we most generally resort to an empirical mode of treatment in epilepsy, Dr. T. states, that although the remedies proposed for the cure of this disease are very numerous,—amounting already in the seventeenth century to more than two hundred, yet he has only found two, the efficacy of which appears to him to be fairly demonstrated,—belladonna and nitrate of silver.

"It is true, that with belladonna I have never cured a well established case of epilepsy; all I have accomplished by even its long continued use, was to render the attacks less frequent. By the nitrate of silver, on the contrary, I have radically cured true epilepsies of many years standing."

"In strong and sanguineous subjects,—when the head is the seat of a sanguineous congestion, I make use of the lancet before resorting to the nitrate of silver. I am very careful, during the course of the treatment, to keep the bowels regular;—I increase very rapidly the dose of the remedy, and direct it to be continued a long time after the cure. I generally commence with one-sixth of a grain, morning and night, and increase it to one grain and a half. A strict regimen is of the highest importance, and it is

particularly necessary to proscribe venereal pleasures." Dr. T. adds, that he has never noticed any change in the colour of the skin, although he sometimes continued the use of the nitrate during two years.

29. *Dr. Johnson on Nitrate of Silver.*—We have already expressed our sentiments concerning the value of this gentleman's little work on morbid sensibility of the stomach and bowels. Dr. J. says, page 125, "It is well known to surgeons that the nitrate of silver is one of the most powerful allayers of irritability, when applied externally to irritable sores. It is also well known, that this medicine may be given internally to the extent of several grains daily, for months in succession, in cases of epilepsy, and that, without ever producing any bad effects." After giving an account of a case of epilepsy, attended with "dyspepsia and great irritability of the stomach and bowels," in which the patient was restored to perfect health by the use of nitrate of silver, he remarks, "But, several cases have since occurred, which lead me to think, *first*, that epilepsy very often depends on morbid sensibility of the gastric and intestinal nerves; and *secondly*, that it is by removing this morbid irritability of the alimentary canal, that the nitrate of silver sometimes cures epilepsy."

Convulsions and epilepsy are often occasioned by worms, and, he remarks, the removal of the worms cures the convulsions and epilepsy, by removing the cause of irritation; and the nitrate of silver very probably acts, in other cases, by lessening the sensibility of the nerves, and thereby rendering them unsusceptible of irritation. On this principle I have administered the nitrate of silver, of late, in cases where the morbid sensibility of the gastric and intestinal nerves, was produced by other causes than worms, and gave rise to other phenomena than epilepsy, and hitherto with marked advantage. Dr. J. next relates the case of a lady "for years harassed with convulsive twitchings, faintings, and a host of anomalous symptoms, almost daily, which rendered her life miserable, and resisted every remedy that could be thought of by several eminent practitioners.

"Not knowing what else to do, I gave her the nitrate of silver, at first in doses of half a grain twice a day, gradually increasing it to four grains per diem, and that, continued for the space of three months." He also gave her sulphate of quinine, to the amount of two or three grains daily, and long before the expiration of the three months she was restored to health. He says further, "half a grain of nitrate of silver, and two, three, or four of extract of rhubarb, or, if the bowels require no assistance, extract of camomile, or gentian, may be given every night at bed time, and the dose gradually increased to two or three grains daily." A most careful attention should be paid at the same time to the diet of the patient, without which all medicines will fail.

30. *Cinchona in Acute Rheumatism.*—Dr. Anthony Todd Thomson has published in the February number of the Medical and Physical Journal of London, some "Remarks on Acute Rheumatism; with cases," in which he advocates the propriety of resorting to the Peruvian bark in this complaint. He seems disposed to accede to the antiquated opinion of the striking resemblance between acute rheumatism and ague—a resemblance on which Hulse Morton and others, predicated the use of bark in the treatment of the former of these complaints. The dread of a metastasis led, he believes, to the abandonment of this practice; "but experience has demonstrated that this dread is unfounded, and where the employment of this remedy has been prefaced by the exhibition of calomel, tartar emetic, and opium, with cathartics, I have had no reason whatever, in a practice of twenty-five years, to alter my opinion on its efficacy and safety." Dr. T. is no great admirer of depletion in acute rheumatism, and states that practitioners (we suppose he means in England only, as the remark cannot

apply to all—at least to American physicians) have found that bleeding in the acute form of the disease, neither lessens the buffy appearance of the blood, nor diminishes the sufferings of the patient, unless opium, or other remedies of the sort, has been employed. Dr. T. usually combines with the bark the vin. colchi, and particularly the spirits of turpentine, the latter of which, he thinks, appears to increase the efficacy of the bark.

"In some habits, idiosyncrasy renders it impossible to continue the use of turpentine longer than forty-eight hours. The urinary organs are strongly excited, and the urine is passed with great heat and pain, and occasionally tinged with blood; whilst the skin is covered with an eruption resembling eczema rubrum; but in these individuals, the advantages derived from the remedy, in combination with cinchona, counterbalances the inconveniences which it causes; although assuredly it should not be continued to be given when the eruption is fairly formed."

Several cases are given in detail; from want of room, however, we are compelled to pass them by.

31. *Iodine.*—The following communication from our friend Dr. Edward Jenner Coxe, of this city, will be read with interest by every one engaged in the practice of medicine, as it will contribute to remove from their minds the fears that may have existed about pushing the use of iodine sufficiently far to ensure its full effects. The quantity of the medicine administered was certainly very large, and would, unless the patient had but little inirritability, or the facts we have heard respecting its deleterious qualities are exaggerated, have given rise to the most unpleasant effects.

"The iodine and its preparations, introduced into practice by Dr. Coindet of Geneva, exerted so powerful an influence upon goitre, that it was called specific for that disease. It was so generally, and, in many instances, so injudiciously used without the advice of a physician, that several deaths occurred, and in a great number of cases so frightful and distressing were the symptoms that death would have been preferable. The medicine as might be supposed fell into disrepute; "every day brought to light some new catastrophe, the effect of iodine; and in the course of a short time its name was associated with the idea of a most intractable and virulent poison. Neither patient nor physician dared venture on its employment. It seemed to be one of those benefits held up to invite the appetite, while its use was denied us."* When the dread of this medicine had subsided, physicians were very cautious in their mode of using it, and it was found to possess as great power over tumors of almost every description as it showed when used for goitre.

Although iodine has been a good deal used in this city I regret I cannot give the general result. Dr. La Roche informs me that he has used it in some cases with success. Dr. Jackson gave the tincture in large doses for some time without effect. To the present time I have not heard of a single case, where the use of iodine has been followed by any of those symptoms described by Gairdner and others. The following case is interesting, as it shows that there are cases where iodine may be used in large doses and continued for some time without producing any injury.

A lady of this city having laboured under ascites for eight years, was tapped for the seventh time, September 12th, 1826. After this last operation there was discovered in the abdomen a large hard and perfectly moveable tumour, which was thought by Dr. Schott and myself to be an en-

* Gairdner on Iodine. p. 5.

larged ovarium. Besides this there was a small tumour on the right side of the neck. We determined to give the hydriodate of iodine a trial, and it was used in the most cautious manner for more than two months, without any perceptible effect. The medicine was discontinued after the first of December, and on the eighth of January, the abdomen being very much distended, tapping was again performed. The water being drawn off, neither Dr. SCHOTT nor myself could perceive any change in the size of the tumour in the abdomen; that of the neck remaining stationary. The medicine having in the first trial produced no effect, it was determined to use it again, and increase the dose until the system showed some sign of being under its influence. The 10th of January, 30 grains of hydriodate of iodine were dissolved in one ounce of water, of which the patient was ordered to take 30 drops three times a day, increasing, after the first day, five drops each dose, which was continued until the 30 grains were taken in one day. She continued to take this quantity every day for twenty-one days, making in all 630 grains, without occasioning one unpleasant symptom. The tumour in the neck was evidently smaller than it had been before commencing the iodine, but in consequence of the expense, it was not thought adviseable to continue it any longer. Since the medicine was discontinued, the tumor in the neck has evidently decreased in size, and is now, the twelfth of March, not the fourth part as large as it was on the 12th September, 1826. The abdomen is considerably distended, and we contemplate tapping the patient in a week or ten days, when, if we perceive the slightest decrease in the size of the tumor in the abdomen, the iodine will have another trial, and the effect, if any, shall be handed in before your next number."

32. *Anasarca cured by means of the Dry Regimen.*—In the "Recueil de la Société Royale de Médécine de Marseille," (first year, No. 1. January 1827,) which we have received a few days ago from the learned editor M. ROUX, is contained the account of a case of anasarca, said to have been cured by what the author, M. D'ASTROS, physician of the Hotel Dieu of Aix, called the dry regimen (diéte seche). The patient was a child, six years of age, who from an imprudent exposure to cold became anasarcous. The swelling was very considerable, extending over the whole body, and resisted the use of an emetic, a purge, and of various diuretics. Perceiving that these means were of no avail, and that the swelling increased, Mr. D'ASTROS appears to have had recourse to his books, and struck with the fact that ASCLEPIADE, HERACLIDES of Tarentum, and CELSUS, occasionally submitted their patients to a complete abstinence from food; and particularly with a remark of the latter, that the duty of a good physician is, to beware filling the patient with a superfluous nourishment likely to increase the matter giving rise to the disease; but at the same time not to allow him to die of inanition, he resolved not to allow his patient any drink, under the impression it would add to the quantity of serum already accumulated; but at the same time not to carry this practice so far as to cause the child to die from thirst.

Following this indication he suppressed every tisane; placed his patient on dry food, and only allowed him about a gill of water and white wine at dinner, with a view of aiding digestion, leaving to nature the care of relieving, by means of the serum collected in the cellular membrane, the thirst by which the little patient was tormented. Not content, however, with this negative treatment, he ordered a blister to the arm, in order to afford an issue to serum accumulated in the upper part of the body, and to excite the cellular tissue. He likewise directed the feet, legs and thighs to be covered with warm cabbage leaves, for the purpose of augmenting in them the insensible perspiration; and prescribed internally the Dover's

powders. These different means were continued for about a week,—and produced during the whole of that time a copious sweat, by which the child was completely relieved of the swelling. Drinks were now very cautiously allowed, and in a short time the patient was restored to perfect health.

We have offered the foregoing case to the attention of our readers, not on account of the sound pathological views it contains, nor of the novelty of the practice, (for to prevent patients affected with dropsy from drinking, was formerly a common mode of treating these complaints); but in order to show with what ease, cases of anasarca, arising from exposure to cold, and unattended with derangement of internal viscera, (which M. D'A. tells us was the fact in his patient,) may be cured by those means calculated to produce diaphoresis. The ideas of some old writers, (whom M. D'A. might have quoted with more propriety than he did CELSUS,) of prohibiting the use of drink from the fear that they would increase the quantity of serum, is an error which more modern experience has completely exploded; and we have no doubt that if our author had resorted to the above mentioned means, and allowed his patient at the same time, enough water to quench his thirst, he would have succeeded as well. He would also, by so doing, have saved himself the necessity of indulging in a reasoning which, it appears to us, would have better suited the fifteenth than the present century.

33. *Digitalis in Epilepsy.*—The Edinburgh Medical and Surgical Journal for January, 1827, contains a short essay "On the employment of Digitalis in Epilepsy," by Mr. ROGER WAKEFIELD SCOTT, of Liverpool. Mr. S. appears to have prescribed this remedy with success in the above mentioned disease, if not as a cure, at least as a palliative, and adduces a case communicated to him by his friend DR. BRIGGS, "which strongly exemplifies the utility of digitalis, even in a small quantity, in a peculiar affection of the sensorium, accompanied with other marks of general irritability." In Mr. SCOTT's case of epilepsy, the patient, nine years of age, had been affected with chronic hydrocephalus;—the faculties were much impaired, and the convulsions at one period came on as often as twenty times every day. They had been suspended by means of medicines on two occasions for the space of several months; but returned, and during the four years previous to this application of the patient to Mr. SCOTT, he had never passed a day without them. He had usually six or seven, sometimes ten or twelve. They were generally preceded by twitchings, but sometimes came on without any indication. They were excited by the slightest causes, such as fear, anger, fatigue, crying, and even a current of fresh air blowing upon his face. When the case came under his care, Mr. S. prescribed nitrate of silver, and continued it for some time;—ammoniated copper, arsenical liquor, sulphate of quinine, mercury and daily purgatives. He also frequently resorted to leeches and blisters, and established an issue. But from the latter means no relief was obtained.

"I then prescribed the tincture of digitalis, in the dose of six minims, three times a day. In a short time the frequency and duration of the paroxyms were diminished; and by gradually increasing the quantity to twelve drops, they altogether ceased: and he continued free from them for four months; though the twitchings did not entirely cease." The patient was now sent into the country, where his general health improved; but the fits returned. Since that time he continued occasionally subject to them; but in a milder form and not so frequent as formerly,—not oftener, on the average, than once in ten days. "As his mother had observed that violent twitchings generally came on immediately before the accession of a paroxysm, or were much aggravated if they already existed, she was induced

to administer the tincture at those times, as being more likely to prevent the attack, and she accordingly found that it was attended with that effect. Instead of giving him any definite daily quantity, she now regulates the the dose, and time of its exhibition, according to the frequency and urgency of the twitchings; if the dose be sufficient, it scarcely ever fails to prevent the fit; and she attributes those to which he is occasionally subject, to her not venturing to give it in a quantity sufficiently large to prevent them, which she feels persuaded it would otherwise do. Sometimes, when the twitchings have been unusually severe, she has given him half a dessert-spoonful in a few minutes before they have ceased, and that upon some occasions twice in the same day; but it is seldom requisite to exhibit it so largely." "If the twitchings are violent towards night, she observes, that he has frequently an attack during sleep, or immediately upon awakening in the morning, and this she has found to be prevented by giving him a tea-spoonful at bed time. Those violent twitchings, also, which generally precede an attack, sometimes come on in the morning, when she likewise administers it with the same effect."

To this case Mr. Scott has appended some interesting remarks, which we are sorry our limits will not permit us to transcribe here. We must mention, however, that he is not of opinion that the digitalis will effect a permanent cure in this case, as it is probable that some organic change has taken place—in which we concur with him.

34. *Sulphate of Quinine administered by Friction.*—At a meeting of the Royal Academy of Medicine of Paris, held on the 22d of August last, MM. Bagneris, Itard, and Miquel, read a report on a memoir by M. Pointe, physician of the Hotel Dieu of Lyons, entitled "*Observations sur des Gastro-enterites, avec Fièvre remittente et intermittente guéries par le Sulphate de Quinine administré en Friction.*" From this report, an account of which is contained in the Archives Générales for Sept. 1826, it appears, that M. Pointe, having remarked that the sulphate of quinine very often irritates the stomach, when administered internally, resolved to use it by friction on the gums and internal surface of the lips, as Clare had already done with mercury. He details, in his memoir, nine cases of intermittent and remittent fevers, which were cured by this method. The dose of the remedy was from four to eight grains, morning and evening. The only inconvenience which M. P. could discover, was the extreme bitterness of the sulphate, which could perhaps be obviated by combining with it some other substance. In two cases, the salt was applied on a blistered surface, and produced the desired effect. This proves, that in the other cases the remedy was absorbed; and that the opinion of some of the members of the academy, who took part in the discussion elicited by the report, and who thought that a portion of the sulphate had been swallowed, and that to this the benefit was to be ascribed, is destitute of foundation.

35. *Extract of the Indigenous Poppy, or European Opium.*—At a meeting of the Royal Academy of Medicine of Paris, held on the 10th of October last, M. Drousart read some observations, in continuation of those already read by him at a former meeting. His object is to discover the reason why the extract of indigenous poppy, although as calming as the oriental opium, very seldom produces narcotism. With a view of arriving at this knowledge, he endeavours to find out which, among the constitutent parts of opium, produce calming, and which give rise to exciting effects. It appears certain, that opium, when completely deprived of morphia, of narcotin, and of the acrid principle, is inert. The question then is, to determine accurately the action of these three elements. Agreeably to MM. Magendie and Robiquet, the calming action of opium is due to the morphia, and its exciting action to the narcotin. MM. Delens and Vassal entertain the same opinion

with regard to morphia; whilst, on the contrary, M. GUERSENT attributes to this substance exciting qualities, and M. LERTUERNER and a French pharmaceutist have proved them by direct experiments performed on themselves. This opinion is also that adopted by M. BALLY, after numerous trials made by him at the hospital of La Pitié; finally, M. BARBIER remarks, that the action of morphia is similar to that of opium, and that, like that of the latter, it is sometimes calming, sometimes exciting. It results from these researches on morphia, remarks M. DROUSART, that this substance does not possess the specific property of calming the brain, and that it only effects this in some cases by determining a congestion in that organ. The difference of opinions respecting the properties of pure narcotin, is still greater. MM. MAGENDIE and BARBIER say, they have seen this substance produce, in doses of half a grain, exciting effects of great intensity; whereas M. BALLY asserts, that he has administered from thirty to sixty grains of it with impunity. It appears to be held in solution in opium by an oily matter: and MM. ORFILA and BALLY, having administered narcotin dissolved in oil to dogs, in order to approximate it to the state in which it is discovered in opium, imagined they saw that it then exerted a calming action; the pupils, which under the influence of morphia are contracted, under that of narcotin were dilated. From these facts, M. DROUSART concludes, not absolutely, but very probably, that narcotin is the principle which possesses the calming virtue; and discovers in this fact the means of explaining the more calming and less narcotic action of the extract of indigenous poppy; as, on the chemical analysis of the latter, it is found to contain much less morphine, and more narcotin, than the oriental opium of commerce.—*Archives Générales, Nov.* 1826.

V. SURGERY.

36. *Barton's New Operation for Anchylosis.*—Additional note in the case of John Coyle, in whom a new joint has been formed at the hip. See page 289, of this number.

March 22d, 1827. My patient continues to improve. A day or two since, he convinced me of his increasing strength, by walking, *without even the aid of a cane*, a distance of about fifteen yards; and repeated it on another occasion. The hip bears not the least appearance of disease, and is of a healthy temperature. Nothing is observable, but a sound and well-formed cicatrix.

It is just four months since the operation was performed, and the lapse of time has not caused any restriction to the movements of the joint. The degree of motion, though more limited than that of a natural articulation at the hip, is, nevertheless, with slight aid of the spinal column, adequate to the various offices, and to the extent already described.

The permanency of the joint may, I think, be fairly calculated on, when it is considered how difficult, frequently, and sometimes impossible, it is to effect the cure of false joints, by resorting to the most powerful means of inflaming such parts. There is, at present, a patient just admitted into the Pennsylvania Hospital, and under treatment for the cure of a false joint in the middle of the tibia, which has resisted the irritation of exercise and pressure in walking, for seven years. The person has been in the full enjoyment of health. J. RHEA BARTON.

37. *Fracture of the Pubis.*—On the 10th of August, M. LARREY presented to the section of surgery, a soldier who had completely recovered from a fracture of the right horizontal branch of the pubis, and probably also of the ascending branch of the ischium of the same side. The rever-

sion of the ilium outwards, and the elongation of the limb, gave the appearance of a luxation of the femur downwards and inwards. The accident was caused by the pelvis being pressed between two wagons.—*Archives Générales, Sept.*

38. *Varicose Aneurism.*—M. Larrey, on the 1st of August last, presented to the Academy of Medicine, a soldier, presenting still some traces of an original varicose aneurism of the external iliac artery and vein, resulting from the puncture of a small sword, which entered obliquely at the linea alba, where the cicatrix was yet observable, and wounded the vessels a few lines before their passage under the crural arch. This soldier was cured by the almost continual application of ice upon the aneurismal tumour: the disease, at first, filled the whole iliac region, and formed externally an oval swelling, projecting about seven or eight *centimètres*, and parallel to the iliac vein. *Nine moxas*, which were successively applied around the swelling, and a cooling regimen, contributed to the recovery. The treatment lasted eighteen months, and the soldier now walks without lameness, and has returned to the service.—*Ibid.*

39. *Fish-bone, the Nucleus of a Calculus.*—Extract of a letter from Dr. H. W. Bassett, a surgeon of the navy, to a friend in Philadelphia, dated Barrancas, July 14, 1826.

"Sailing Master W. of the navy, complained, on the morning of the 10th instant, of a sharp, pricking pain in the hypogastric region, accompanied with some degree of fever. The next day, the pain increased, extending along the course of the urethra, connected with some difficulty in voiding urine. These symptoms continued until this afternoon, when a *fish-bone* was ejected, with some degree of force, from the urethra. It was coated, to the full size of the urethra, with blood and pus. The bone was nearly an inch in length. As no pain was felt in the vicinity of the kidneys, it is probable that it passed through the coats of the rectum and bladder."

40. *Suppression of a Gonorrhœa, followed by Trismus.*—Dr. Fenoglio, of Turin, relates that a young man, of a robust habit, arrested a gonorrhœa by twice immersing the penis in ice-water. Three days afterwards he was affected with a stiffness of the muscles of the neck and jaw—difficult deglutition, &c. These increased, and were accompanied with wandering pains—general fever—beating of the carotids, &c.

Dr. F. succeeded in re-establishing the urethral discharge, by means of warm baths, cataplasms, and irritating bougies, and thus effected the cure of the tetanic complaint, after it had lasted three days and three nights.—*Jour. Univer. for October.*

41. *Non-Mercurial Treatment of Syphilis.*—In our last number, at p. 197, we alluded to a paper on this subject, by Dr. Becker, (not Bucher, as there misprinted,) of Berlin,—the concluding portion of which we have since noticed in the London Medical Repository, for December, and in the Revue Médicale, for October.

The historical review appears to prove, that the treatment of syphilis without mercury was long ago in general use;—that the diagnostic appearances, to which the application of mercury has been lately restricted, are by no means well marked,—and finally, that there is still great obscurity on this important subject.

In the second part of his essay, Dr. Becker endeavours to answer the following questions:

1st. Is it possible to heal the primary syphilitic sores without mercury? what are the necessary conditions of such cures? and in what degree, as to quickness and security, are they preferable, or otherwise, to recoveries effected by mercury?

2d. Can we, by the proper management of mercury, certainly prevent the appearance of secondary symptoms?

3d. Is the occurrence of secondary symptoms constant, at least more frequent, in cases treated without mercury?

4th. How do the secondary symptoms, ensuing after the two methods of treatment, differ as to form or severity?

5th. Supposing that the secondary symptoms are curable in each case, without mercury, are they healed as securely and as quickly when this remedy is not, as when it is employed?

As to the *first* question, Dr. B. observes, that at the present day, it cannot be doubted, that syphilis can be successfully cured without mercury. The rapidity and security of the cure are in direct proportion to the rest, cleanliness, and diet, which have been observed. Rest in a horizontal position, if immediately resorted to on the first appearance of the ulcers, will almost always prevent the occurrence of buboes. These, when they do appear, do not demand mercury, as proved by the observations of KERN of Vienna—HILL of Edinburgh—THOMSON, &c. &c.

The *second* question cannot be satisfactorily answered; the author inclines to the negative.

As to the *third* question, he observes, that Sir JAMES MACGREGOR states the occurrence of secondary symptoms, when mercury was employed, as 1 to 55½. This favourable result is explained, (at least partially,) by the fact, that these English surgeons were generally partisans of the mercurial plan, and hence referred all the doubtful appearances to some other cause. MACGREGOR cites one regiment, in which, among 68 cases of genuine syphilis, treated without mercury, not one exhibited secondary symptoms. This same author gives the proportion of secondary symptoms 1 to 20½; HILL 1 in 13; THOMSON 1 to 12—15; and HENNEN 1 to 8¾. Some causes are assigned, why this statement should not appear unfavourable to the simple treatment of syphilis.

The *fourth* question is answered by Dr. B. in favour of the anti-mercurial plan. Sir JAMES MACGREGOR, from a comparison of 147 cases, infers that the secondary symptoms which succeed the employment of mercury, are far more difficult of treatment, than when that mineral had not been used. The experience of HILL, HENNEN, and THOMSON, confirms this statement.

The last question M. BAKER answers affirmatively, at the same time, he distinguishes between those cases where mercury was employed for the primary sores, and those where a simple antiphlogistic treatment was followed. The secondary symptoms, consequent to the last plan, are far more manageable than those consequent to the former, and even syphilitic iritis is successfully treated by local and general bleeding without mercury, in the practice of Dr. THOMSON. The secondary symptoms after mercury, though for the most part curable in the same manner, are yet frequently very difficult to manage, as they certainly are more severe.

42. *Amputation of the Neck of the Uterus.*—M. LISFRANC communicated to the section of surgery, a new case of successful amputation of the neck of the uterus: the woman became pregnant *fifteen* days after the operation; the wound healed at the end of two months. The pregnancy has no peculiarity, and has now extended to the middle of the ninth month.—*Arch. General. for December.*

43. *Excision of the Head of the Humerus.*—In the Edinburgh Journal for July, Mr. SYME relates a case in which he performed this operation on a female, for a diseased shoulder-joint of seven years standing. A perpendicular incision was made from the acromion to near the insertion of the deltoid. A finger being introduced, the disease was found to be almost entirely confined to the head of the humerus; he therefore formed, by a

semilunar cut, a flap from the scapular portion of the deltoid,—exposed the joint,—insulated the head of the bone,—protruded it,—and sawed it off, without any injury to the soft parts. A portion of the acromion, being found rough, was removed by the cutting forceps,—the glenoid cavity was deprived of its cartilage, but was otherwise sound. A smart hæmorrhage, from the posterior circumflex artery, was arrested by a ligature. Fever, treated by antiphlogistics, and followed by sinking, with erysipelas, requiring stimulants, succeeded the operation; but the cure went on regularly to a favourable termination. "The limb is shortened about an inch, and *the shoulder-joint is susceptible of distinct motion in all directions, by means of its own muscles*, while all the other joints of the limb are as serviceable as they ever were."

Our readers will immediately perceive, how much this fortunate, and, as far as Mr. SYME was concerned, this *accidental* cure by the formation of a *flexible* joint, in place of the original one, is corroborative of the very ingenious, scientific, and thus far, successful operation of Dr. BARTON, for anchylosis, which we have the satisfaction of publishing in the present number of this Journal:—an operation, which, among judicious and well informed surgeons, promises to extend the usefulness of the chirurgical art, and demonstrates the great importance of establishing principles in surgery; for science, not accident, suggested to Dr. BARTON its propriety and feasibility.

In the Edinburgh Medical and Surgical Journal, for January, we find that Mr. SYME has again performed this operation of excision of the head of the humerus, for disease of the shoulder-joint. He operated on the 11th of July,—in a week, his patient was able to walk about,—in six weeks, the wound had healed, excepting a portion involving an old sinus, which continued open on the 1st of November, but which probably has healed up.

44. *Extravasation of Blood on the Spinal Marrow.*—Mr. MULLER, in the Medical and Chirurgical Review, for January, mentions the case of a man who, while assisting in putting hay into a loft, fell backward across a cylindrical block of wood. On being raised, he was found pale, but sensible,—the lower half of the body was *dead*,—feeling was extinct in all parts of the body, (?)—there was no external wound. In the night, the patient was agitated and delirious: next morning, he talked rationally, and he had a more animated countenance; but the pulse was feeble, and he felt convinced he was dying. He died a few hours afterwards.

On examining the back, blood was found extravasated between the muscles and the vertebræ, as also into the theca vertebralis, from the sixth cervical to the ninth dorsal vertebra. The brain, and all the other viscera of the body, were sound.

45. *Partial Removal of the Humerus.*—(Gerson and Julius' Magazine, July and August, 1825.) "A young man dislocated his humerus and fractured it close to its head. He did not apply for several days after the accident. At the end of some weeks, the fracture was not reunited; and the lower (proximal or distal?) end of the bone stood so much out, that its sharp end constantly irritated the soft parts, and the patient could not move his arm, as the slightest motion caused intolerable pain. To remedy this, the point of the lower fragment was separated from all the surrounding soft parts, and a considerable portion sawed off, *in order to form an artificial joint.* The operation succeeded perfectly. After the healing of the wound, the use of the arm was restored, with little difference from the sound arm."—*Edin. Med. and Surg. Jour. January.*

46. *Bronchocele—in which the superior Thyroid Arteries were tied.*—Mr. EARLE, in the September number of the London Medical and Physical Journal, relates a case of enlarged thyroid gland, causing so much difficulty

of respiration as to threaten suffocation—and where the patient, a female, was apparently suffering under a pectoral disease with amenorrhœa for five months; incapability of swallowing solid food, &c. for which he secured the thyroid arteries—these vessels being greatly enlarged and beating with much force.

On the first of August, 1823, Mr. E. put a ligature on the right superior thyroid artery, which was nearly equal in calibre to the carotid. The most acute pain in the head immediately followed the tying of the ligature, and was succeeded by drowsiness amounting to coma. Aug. 6. Patient better—tumour diminished. Aug. 23. Tumour diminished 3½ inches in circumference, principally on the right side. Sept. 17. The left superior thyroid artery was secured,—no bad effects. On the first of October,—ligature came away,—menses reappeared after an interval of seven months. On the tenth, patient left the hospital—no cough—no impediment in swallowing,—no difficulty in respiration. The tumour was smaller, softer—and more divided in its texture. In January, 1824, the tumour was slowly decreasing, and her health was greatly restored.

47. *Urethro-cystic Speculum.*—"At a sitting of the Royal Academy on the 11th of December—M. Segalas read a note on the means of illuminating the urethra and bladder, so as to examine the interior of these organs. It consists of two bougies, two mirrors and cylindrical tubes. It forms a kind of spectacles (de lunette) to which he has given the name *Speculum uréthro-cystique.* This physician, in order to afford an idea of the illumination thrown into the bladder by his apparatus, declares, that with its assistance he is able to read, in the darkest place and at the distance of fifteen inches, the finest printed characters; of this fact, M. Segalas gave actual demonstration to several of the academicians, in an experiment, made in the library of the institute."—*Archives Générales, Dec.* 1826.

48. *Ligatures to Arteries.*—In the Edinburgh Medical Transactions (vol. 2d.)—Mr. Fielding has proposed, after some experience, to employ *silk-worm-gut*, for ligatures to arteries. "It is much used by fishermen at the end of their lines—is apparently an animal substance—will sustain a weight of several pounds without breaking, and may be softened by being steeped for half an hour in warm water, so as to be easily formed into a knot." This substance retains its tenacity long enough for union of the coats of the vessels to take place. "In no case have we seen any appearance of the knots, though carefully looked for at every dressing; and in no case, has any abscess or other inconvenience followed its use"—accidents which have so frequently followed the practice of Mr. Lawrance, of employing fine dentist silk for ligatures and cutting off both ends.—*Med. Chirur. Rev. January.*

In the last number (January) of the Medical Recorder, Dr. Jameson, of Baltimore, has borne a very decided testimony to the advantages and safety of the *animal ligature*, originally suggested by Dr. Physick; which substance, being soluble, seldom, if ever, gives rise to any inconvenience. "We have used," says Dr. J. "the animal ligature for six or seven years, in many amputations of the limbs, and of the mammæ. We have once tried the carotid, once the external iliac, twice the femoral, four times the radial, once the posterior tibial, seven times the spermatic; and in no instance have we ever had secondary hæmorrhage; never have we had a ligature to slip. We have never seen any of our ligatures after their application; and often, indeed generally, our wounds have healed by the first intention." Dr. J. prefers "the ligature of soft buck-skin, of moderate thickness, cut from the skin about twice as wide as thick, and drawn between the nails of the thumb and fore-finger, so as to make it more solid."

He objects most strenuously to the modern practice of tying the liga-

ture, so as to divide the internal and middle coats, and thus coincides with SCARPA and CRAMPTON, in the use of *flat* ligatures, that this rupture may not ensue—a practice this, which is decidedly opposed by a majority of the best modern surgeons.

Dr. J. has also made experiments on sheep, &c. as to the effect of *transfixing an artery* with a buck-skin ligature, by means of a common suture needle. The artery in these cases becomes thickened, and its cavity obliterated; hence he suggests, that the practice of surgery, in cases of aneurism, may be improved "by passing a section of buck-skin through the affected artery, instead of tying it; that in this way, we may most safely obliterate a varicose vein; and, further, that we should not hesitate to try the same method in aneurismal varix." These suggestions, let it be remembered, have not been tested on the human subject; and we would recommend much caution on this point, as the human system is so much more irritable than that of inferior animals, that an irritation, which will excite an adhesive inflammation in the one, will often produce, in the other, a phagedenic or gangrenous inflammation.

49. *Staphylo-raphe, or Palate Suture.*—In the *February* number of the London Medical and Physical Journal, Mr. HERBERT MAYO describes a congenital fissure of the soft palate, in a man, aged twenty-six years, very similar to that of Professor STEVENS, published in the present number of this Journal. In Mr. MAYO's patient, the voice was unpleasant and guttural; he could, however, articulate every letter intelligibly, except the letter *t*. His drink was always partially discharged through the nostrils; and even part of his solid food made its way through the fissure to the upper surface of the palate, until he managed to dislodge it.

The operation was performed on the 8th of December, 1826, in the usual way. Four ligatures were passed, apparently without difficulty, by means of a small curved needle, fixed in a strong porte-aiguille, and drawn through by the forceps.

In the evening, the patient swallowed a small quantity of liquid food, without the return of any part by the nostrils; (the entire abstinence recommended by Dr. STEVENS, would seem preferable to this indulgence.) On the 10th, the two uppermost ligatures were removed, and the remainder on the 11th; the union appearing firm. Subsequently, the lower third part gave way; the remaining two-thirds formed a permanent adhesion. On the 31st of December, the operation was repeated on the lower portion, which was not fully successful, a small opening remaining at the upper angle of the incision; this, however, contracted; and by the 14th of January, 1827, was diminished to a line in diameter. At this date, the patient could swallow perfectly, and was able to articulate distinctly the letter *t*, in his own name, Tucker, which he had previously pronounced "Ucker;" the guttural tone remains unchanged.

50. *Injuries from Dissection.*—In our last number, we detailed some valuable cases of the bad consequences of wounds received in dissection, from Mr. TRAVERS' work on Constitutional Irritation. In the February number of the London Medical and Physical Journal, there is an account of another case of this kind, occurring in a physician, and reported by his surgeon, Mr. SHAW. We regret we cannot give the details; we have only room to give the following extract from Mr. SHAW's observations: "From the history of this case, I think we are justified in concluding, that the symptoms resembled those following the bite of a venomous animal, more than those consequent on thecal inflammation, and that they proceeded from a cause independent of mere thecal inflammation;—that immediately on the commencement of such symptoms, stimuli are not injurious; that it is not necessary to bleed in such cases;—that the combination of calomel, opium, and stimuli,

even of the most powerful kind, seem to be useful;—that the lotion of acetate of lead and opium is a powerful auxiliary to the general method of treatment." In a note, he observes, "it must not be forgotten, that in almost all the cases which have terminated fatally, the patients have been bled either by the lancet or by leeches."

While recommending to the serious attention of the profession, these views and practice of Mr. SHAW, we would beg to be understood as restricting this treatment entirely to those cases, in which the nervous symptoms are the prominent indications of danger, where there is no vascular excitement, with great prostration of the organic functions. Vide Review of Travers on Constitutional Irritation, page 92, of this volume, for cases of this character.

51. *Ligature on the Subclavian Artery.*—Charles Lechevalier, 37 years of age, had been wounded in the shoulder of the left side, while a soldier in Spain, in 1811. The wound was made with a pointed instrument, and healed in three weeks: two months afterwards, however, a small tumour formed in the axilla, attended with pulsation, and during two years captivity acquired the size of an egg, and the pulsations were very strong. During a toilsome march of 900 miles, the tumour increased, so as to equal the head of a child twelve months old. He entered the Hotel Dieu, under the care of Baron DUPUYTREN, and the subsequent history is reported in the Repertoire, No. 2, by M. MARX.

DUPUYTREN determined to secure that portion of the subclavian artery which is situated *between* the scaleni muscles, because the artery is here separated from the vein and from the plexus of nerves, and the anterior pillar of the scaleni is a sure guide to the artery. "The patient being prepared for the operation, an incision was made in a slanting direction, an inch above the clavicle, through the integuments, by which some vessels were divided that required tying. The incision was then continued, the scalenus sought and found, and *this muscle divided close to its insertion by a bistoury.*" The ligature was readily passed by means of an eyed-probe of silver, and tied without pain. No inconvenience was experienced. On the 11th day, the ligature came away without any discharge of blood; the tumour was much diminished: by the 17th day, it was reduced to one-third, and offered no pulsation: by the 30th day, the wound was cicatrized, the patient began to use his arm, the tumour daily decreasing; but manifesting signs of suppuration, cold astringent applications were successfully employed. By the 78th day, it was reduced to one-fifth of its former size, and was still decreasing. The heat, sensibility, and mobility of the member, were now nearly the same as in the other arm. No pulsation at the wrist, although the vessels appeared to be full of blood. This man returned to his usual avocations; but three years after, in July, 1822, was re-admitted into the hospital, for an inflammatory tumour in the same axilla; this suppurated, and the patient has since remained well.—*Med. Chirurg. Rev. for Jan.*

52. *Ligature of the Carotid Artery.*—On the 9th of October, 1803, Mark Jackson, a servant on board his majesty's ship Tonnant, inflicted on himself a deep wound across the throat; it was four inches in length, dividing the larynx between the cricoid and thyroid cartilages, the two superior thyroid arteries, the internal jugular vein, and grazing the outer and muscular coats of the carotid artery. All these vessels, except the last, were secured by Mr. FLEMING, surgeon of the ship; and the patient gradually recovered from the effects of the hæmorrhage. On the 15th of October, the ligatures came away; but the patient was much troubled by a cough, increasing in violence, from the admission of fluids into the trachea; hence, on the evening of the 17th of October, during a violent paroxysm of coughing, "the carotid artery burst, and my patient was in an instant deluged

with blood. The spectacle was rendered still more horrid, by the danger of suffocation, and the torrents of blood that issued from the mouth and nose." From the ulcerated state of the artery, every attempt to secure it failed; and syncope alone rescued the man, for a time, from actual death. In this situation, Mr. FLEMING resolved to cut lower down, and secure the carotid artery in a sound place, although he had never heard of this operation having been performed. This was readily effected, and the further flow of blood prevented. For some time, the patient appeared deprived of life; but, by the aid of stimulants, and nutrient clysters, he gradually revived, so that, by the 20th, his pulse was 90, with some increase of energy. On this day, he had an evacuation per anum, the first time for eleven days. He rapidly recovered, and was discharged from the sick list on the 20th of December, 1803.

"This," says Dr. JOHNSON, "was the first instance, in which the carotid artery was taken up, after a wound or rupture of the artery itself, and life preserved." ABERNETHY's case (which was unsuccessful) was reported in 1804.—*Med. Chirurg. Rev. for Jan.*

53. *Amputation of the Lower Jaw.*—M. DUPUYTREN presented to the Royal Institute of France, on the 7th of August, a man, named Lezier, and two females, from whom he had removed a great part of the lower jaw. To this operation he was led by observing, that, very often, individuals survived, after having lost a large portion of this bone by a gun-shot wound; and hence, there could be no reason why the operation of removal should not be performed to save life, or to remove tumours, which, adhering to the jaw, filled the whole mouth, and dilating the surrounding parts, gave to the individuals a most hideous aspect. Hence, in one of these individuals, he divided the chin, and amputated the jaw on each side of the molar teeth; he re-united the two lips of the wound; the bones approached each other; and in twenty-five days, the patient resumed his occupations. The portrait of Lezier, as he was before the operation, is preserved at the Museum of the School of Medicine at Paris. M. DUPUYTREN observed, that of *seventeen individuals who had been since operated on*, fifteen survived the operation.—*Rev. Med. for Sept.*

In the Bulletin Universel for October, an account more detailed is given of DUPUYTREN's report to the Institute. His first operation on Lezier was performed in 1812. He cited at least twenty-five cases, operated on by himself, by M. LALLEMONT of Montpellier, GRÆFE of Berlin, &c. In some of these, the lower lip was preserved; in others, it was removed, according to its condition, whether healthy or diseased. In a few, the whole alveolar processes were removed, and yet the patients survived. Three only have died in consequence of the operation; five or six, after some years, suffered relapses, which proved fatal; and eighteen have been radically cured.

"The immediate effects of amputation of the lower jaw, are much less severe, and last a much shorter time, than is usually imagined; a few days suffice for the cicatrization of the skin; and as to the bone, the re-union of the divided parts never occupied more than thirty days."

54. *Collection of Milk in the Substance of the Mamma.*—In the Archives Générale, for September, a rare case is detailed in the Opuscoli di Chirurgia of SCARPA, in which a female, aged 20 years, observed a swelling in the left axillary region—ten days after her second confinement. This was not preceded or accompanied by any inflammatory symptoms;—it continued to increase in size, while the flow of milk from the left breast gradually declined, and disappeared, so that in less than two months, it measured thirty-four inches in circumference, and when the female was seated, the breast was supported on the left thigh. The skin was shining,—and the cutaneous veins enlarged—but otherwise was unaltered.

Scarpa punctured this tumour, and drew off by means of a canula, *ten pounds of milk*, which did not differ, in its physical or chemical qualities, from milk recently secreted. The cavity of the tumour was kept open, and was eventually obliterated by means of a seton.

After a subsequent confinement, the patient suckled her child from both breasts, without the tumour being renewed.

55. *High operation for Lithotomy.*—Dr. Ballingall details, in the Transactions of the Edinburgh Medico-Chirurgical Society, the particulars of an operation for the stone—performed above the pubis—on a boy six years of age—who had suffered from infancy, a difficulty in making his water, and had an unconscious discharge of it in bed. The urine was drawn off by means of a catheter; and an *unsuccessful* attempt made to inject the bladder with tepid water, in consequence of the struggles of the patient, and the contraction of the abdominal muscles. The usual cautious incisions were made through the skin, &c.—and the bladder was opened by a sharp pointed bistoury,—the operator feeling the extremity of a catheter, introduced per urethram. The stone was found *impacted* in the upper part, or fundus, of the bladder,—and was extracted with great difficulty, after several fragments had been broken off by the forceps, and after enlarging the wound in a lateral direction, at right angles to the first incision, so as to avoid the now exposed peritoneum. The stone was of an irregular plum shape, weighing, exclusive of many large fragments, thirteen drams and one scruple; measuring in its longitudinal diameter upwards of two inches, and in its transverse diameter one inch and a half. It consisted principally of mixed phophate of lime and ammoniaco-magnesian phosphate. The patient survived the operation about thirty-six hours. *Dissection* revealed some marks of inflammation and some bloody serum in the peritoneum. The upper part of the bladder, embracing the stone, was enveloped with strong muscular fibres, converging towards a point on the anterior surface of this viscus: at this point, the coats appeared thickened, and the internal surface of the bladder was highly vascular, and of a soft flocculent appearance. Below the place where the stone was lodged, there was some disposition to organic contraction. The *reasons* which induced Dr. Ballingall to prefer the high operation in this case, were—the magnitude of the stone—its peculiar situation—and the possibility of being foiled in extracting it by the lateral operation.—*Med. Chirur. Rev. Jan.*

VI. MIDWIFERY.

56. *Premature Labour Artificially Induced.*—Maria N. aged twenty-three years, was admitted into the Clinique d'Accouchement of Pavia, under the care of Professor Bongiovanni. She was seven months advanced in her first pregnancy. An examination of the pelvis, by the hand, and by the pelvimeters of Baudelocque and of Couterly, proved that the sacro-pubic diameter was reduced to two inches and nine lines, and the oblique diameter to three inches; and hence, that delivery at the full period of utero-gestation, could not be effected with safety, at least to the child. These considerations were the chief inducements for exciting a premature labour. This was attempted on the 17th of May, 1826, at 10 o'clock, A. M., by puncturing the membranes with a trocar slightly curved, after having ascertained, that the head presented at the superior strait. The patient continued up the remainder of the day—the liquor amnii slowly escaping. On the 18th, uterine pains followed, the dilatation of the neck of the uterus commenced, and at 5 A. M. of the 19th, forty-three hours after the punc-

ture of the membranes, a female infant, well formed, entered the world. The child was thus born fifty days before the full period,—it weighed six pounds and three ounces. The occipito-frontal diameter was three inches and eleven lines,—the transverse, or parietal diameter, was two inches and nine lines,—the auricular was two inches and seven lines. The infant lived and thrived well; the mother's life was at first endangered, but she recovered perfectly by the 12th of June.—*Rev. Med. Sept.* 1826.

57. *Inertia of the Uterus during Labour.*—In the same hospital at Pavia, four cases of tedious labour from deficient uterine action, are recorded—two of which were facilitated by diffusible stimuli, and two by the *ergot.* The professor decides that this last valuable article operates in a manner entirely different from that of the former. In other words, it has a peculiar and specific operation on the uterus,—a truth which we are happy to find is gaining attention in the practice of midwifery among our European brethren. It has for many years been acted on in the United States.

In the Annali Universali di Medicina, for April, 1826, three cases of labour, facilitated by the ergot, are given in detail, by L. Balardini.—Vide *Bulletin Universel, for Sept.*

58. *Presentation of the Umbilical Cord.*—M. Dudan, at the sitting of the Royal Institute, on the 21st of August, reported a case of accouchement, in which the umbilical cord, having descended before the fœtus, was successfully returned by means of a gum elastic catheter. His method consisted in passing a narrow waxed ribbon through the lateral orifice near the extremity of the catheter, where it was retained by the stilet. To this ribbon was attached the umbilical cord without compressing it;—if the fold of the cord be short, from seven to eight inches, it should be fixed in the middle; if longer, the cord must be doubled, and be secured at the centre of the duplicature. In this way, it can be returned, although a slight difficulty, and a temporary interruption to the circulation in the cord, may be experienced,—as it is pushed between the head of the fœtus and the cervix uteri. When the duplicature has been effectually returned, the instrument should not be withdrawn, until the uterine contractions have forced down the head so as to prevent the re-descent of the cord,—then the stilet should be removed, and afterwards the catheter. The ribbon remains behind without any inconvenience, and will be expelled with the child. The length of the fold of cord in M. Dudan's case was from twelve to fifteen inches.—*Rev. Med. for Sept.*

59. *Uterine Polypus.*—In the Journal Universel for September, M. Jelin relates the case of a female, aged thirty years, who had suffered for ten years with irregular but severe pains in the left hypochondriac region. She was married when twenty-four years of age, and became successively the mother of three children, none of which lived; one was born at the sixth, the others at the full period. Her pains continued severe, and were aggravated by any uterine excitement, by labour, &c. &c. Three days after her last accouchement, she was again seized with labour pains, and discharged per vaginam, "a fleshy mass, surrounded by coagula of blood, of a fibrous texture, larger than the fist, and weighing about ten ounces. At one of its extremities were the remains of the pedicle by which it had been attached to the uterus."

60. *Retro-versio Uteri.*—In the Edinburgh Journal of Medical Science, Mr. Wise relates a case of a woman, 35 years of age, in labour at the full period of utero-gestation, whose vagina he found completely blocked up. With some difficulty he passed his finger upwards and forwards to the top of the pubic arch, and there felt the os uteri dilated, and a foot presenting. On examination per rectum, the head of the child was distinguished low down in the rectum (?), filling the hollow of the sacrum. Mr.

W. learnt, that between the third and fourth month, the flow of urine became obstructed, and that a surgeon, residing nine miles distant, drew off her water once a week, there being constant stillicidium and great distress. By pressing on the head of the child through the rectum, and laying hold of the feet and dragging it in that direction, the delivery was effected, though with considerable difficulty. The patient was at first much relieved, but fever supervened, and she died on the 15th day.—*Med. Chirur. Rev. for January.*

61. *Uterine Hæmorrhage.*—Another case, in which life appeared to be preserved, after excessive uterine hæmorrhage, by the operation of transfusion, is recorded in the *February* No. of the London Medical and Physical Journal. Mr. Burton Brown, the medical attendant, felt convinced that his patient would not survive long enough for the operation to be performed; but he and his friend Mr. Waller thought it ought to be attempted. The first injection of thirteen drams, appeared to induce no particular change; in five minutes, thirteen drams of blood were again thrown into the vein, with manifest advantage—the radical artery becoming decidedly improved and the respiration more free. A further improvement was noticed after the third injection, but it was not till after the fourth injection, that the amelioration was most conspicuous. Now the pupils contracted readily on exposure to light,—she moved her limbs,—the chest fully expanded—pulse 120, equable and moderately forcible, &c.

The operation was performed December 31st, 1823—and by the seventh of January, the patient was as well as usual, after her confinements.

62. *Prolific Women.*—Two women were delivered in April, 1821, at Cadiz, each of three children. The first woman, aged 30, was delivered at 3 o'clock, A. M. of a boy, and at 6 o'clock of two daughters—each child having a separate placenta. It was the seventh childbed—she had had twins in the sixth. The second woman, aged 35, was delivered at 1 o'clock, P. M. of a girl,—between 9 and 10 o'clock, of a dead boy,—and then of a living girl. It was the ninth lying in—with the fourth she had had twins. *Bulletin, Sept.* 1826.

VII. CHEMISTRY AND PHARMACY.

63. *Chemical Changes occurring in Respiration.*—Dr. C. J. B. Williams, in a paper on respiration and animal heat, published in the Transactions of the Medico-Chirurgical Society of Edinburgh, rejects the generally received opinion, that carbon alone is eliminated from the blood, the oxygen of the carbonic acid emitted, being supposed to be furnished by the atmospheric air. On the contrary, he contends that carbonic acid, ready formed, is separated from the blood, and that the oxygen which disappears, has not entered into the formation of the carbonic acid evolved, but has really been absorbed into the blood. Dr. Williams appears to found his opinion principally on two facts; first, that it has been proved by the recent researches of physiologists, that fluids may penetrate animal membranes in the living state; and secondly, that it has been shown by Coutanceau and Edwards, that carbonic acid is emitted, even when oxygen is not inspired.

64. *Mode of distinguishing the principal Varieties of Urinary Calculi.*—Mr. John F. Wood, lecturer on chemistry, London, has given some observations, in the London Medical and Physical Journal for January, 1827, on the analysis of urinary calculi, which appear to us to be well drawn up. We subjoin his principal facts, nearly in his own language.

At present, six principal ingredients have been discovered in urinary cal-

culi,—namely, uric acid, urate of ammonia, cystic oxide, phosphate of lime, oxalate of lime, and the phosphate of ammonia-and-magnesia. One or two other substances have been detected, but are of such rare occurrence, as not to require notice.

These ingredients may be distinguished from each other by the following tests. Three of them are soluble in cold solution of potassa; namely, the uric acid, urate of ammonia, and cystic oxide.

The *uric acid*, during its solution in potassa, evolves no ammoniacal smell, and gives a copious white precipitate on the addition of dilute muriatic acid.

The *urate of ammonia*, under the same circumstances of solution, disengages copious fumes of ammonia, readily detected by the smell.

The *cystic oxide*, during its solution in potassa, gives off no ammoniacal fumes, nor is the resulting solution precipitated by dilute muriatic acid. It is likewise soluble in dilute acids, and disengages a peculiar fetid odour, on the application of heat.

Four varieties of the calculi mentioned, are soluble in muriatic acid, diluted with four parts of water; namely, the phosphate of lime, the phosphate of ammonia-and-magnesia, or triple phosphate, the oxalate of lime, and the cystic oxide. They are all precipitated by ammonia, and the fixed alkalies, except the cystic oxide, which, being equally soluble in acids and alkalies, is of course not affected.

Of the three varieties, soluble in muriatic acid and precipitable by ammonia or the fixed alkalies,—

The *phosphate of lime calculus* is distinguished by its undergoing, when heated before the blowpipe, a very trifling alteration. No peculiar smell is perceived, excepting that of burning animal matter when the heat is first applied. The ash is white, and not alkaline, dissolves readily and quickly in dilute acids; and the solution gives a precipitate with pure ammonia, and with its oxalate, provided there be no excess of acid.

The *triple phosphate calculus* is known by its suffering likewise very little alteration before the blowpipe, unless the heat be very strongly urged, when it fuses imperfectly. Copious fumes of ammonia are disengaged. The ash is generally brown, not alkaline, is soluble but not readily in dilute muriatic acid, and precipitable in the form of crystalline grains by ammonia, showing the re-formation of the triple phosphate.

The *oxalate of lime calculus*, when heated before the blowpipe, blackens, is enlarged in volume, and leaves a great quantity of ash of an intense whiteness, which is soluble with effervescence in dilute muriatic acid; unless the heat have been intense and applied for a long time, when it dissolves quietly. Pure ammonia produces no precipitate from the solution, but a copious bulky one is thrown down by the oxalate of ammonia. The ash gives a deep red tinge to moistened turmeric paper, and is in fact pure lime.

Mr. Wood then gives the following characters to calculi of a mixed nature.

"*Uric Acid and Oxalate of Lime.*—When calculi of this composition are digested in solution of potassa, the potassa will dissolve all the uric acid, which may be obtained by adding dilute muriatic acid to the filtered liquor; and the solid residue, being heated before the blow-pipe, will give the results mentioned above. This mixture generally decrepitates loudly when first heated.

Uric Acid and Phosphate of Lime.—This mixture may be treated as the last; the uric acid being dissolved out by potassa; and the remainder may either be heated before the blowpipe, or dissolved in dilute muriatic acid, and will afford the results mentioned under the head of phosphate of lime calculi.

Uric Acid and Triple Phosphate.—When calculi of this composition are digested in solution of potassa, the acid is separated; a very powerful ammoniacal odour is evolved; and the undissolved portion, when well washed and dissolved in dilute muriatic acid, will, on the addition of ammonia, be reconverted into triple phosphate, in the form of small acicular crystals.

Phosphate of Lime, and Phosphate of Ammonia-and-Magnesia, or the Fusible Calculus.—This variety is immediately recognised by readily fusing before the blowpipe into an opake, white, shining enamel. It suffers very little diminution in bulk, gives off copious fumes of ammonia, and the ash is not alkaline.

Phosphate of Lime and Oxalate of Lime.—These calculi do not fuse before the blowpipe, but swell up in proportion to the quantity of oxalate of lime they contain, and give out no smell of ammonia. The ash is alkaline, and, if it be dissolved in dilute muriatic acid, and the solution precipitated by ammonia and filtered, a precipitate is produced in the filtered fluid by the oxalate of ammonia. Phosphoric acid will dissolve out the phosphate, and leave the oxalate.

Uric Acid and Fusible.—These calculi blacken before the blowpipe, diminish in bulk in proportion to the quantity of uric acid, evolve a powerful smell of ammonia, and presently fuse. The ash is very slightly alkaline, dissolves without effervescence in dilute muriatic acid, and is precipitable by ammonia. We are indebted to Dr. Wollaston for the following method of analysing calculi of this description:—Digest in cold distilled vinegar, which takes up only the triple phosphate; dilute muriatic acid will next separate the phosphate of lime; and the remainder, which will be the uric acid, may be recognised by the usual tests.

Triple Phosphate and Oxalate of Lime.—This mixture does not fuse before the blowpipe, gives off a pungent ammoniacal odour, swells up in proportion to the quantity of the oxalate, and does not perceptibly diminish in quantity. The ash is more or less alkaline according to circumstances, dissolves readily in dilute muriatic acid, and, after ammonia has precipitated all it can throw down, a further deposition takes place in the filtered liquor on the addition of the oxalate of ammonia.

Fusible and Oxalate of Lime.—This calculus differs from the last only in undergoing a partial fusion after the heat has been applied a short time."

65. *Chemical Nature of the Matter of Melanosis, or Black Degeneration.*—This matter possesses an appearance very similar to that, which the contents of a decaying lycoperdon, or common puff-ball, would present, if rendered cohesive by the addition of a small proportion of liquid. It has a deep brown colour, is slightly fibrous, and when agitated in water or alcohol, and allowed to rest, deposites, in part, in the form of a pulverulent sediment of the same colour.

Dr. Henry obtained the following results from a portion of the softened matter, after it had been kept some time in spirit:

1. By filtering through paper, much of the colouring matter remained on the filter.
2. Boiling did not destroy the colour, even with the assistance of a little caustic potassa.
3. It is not changed by acids, even when heated, except by the nitric, which changes it to yellow.
4. A stream of chlorine destroys the colour of the liquid, and throws down light, fawn-coloured flocculi.
5. Corrosive sublimate precipitates the whole of the colouring matter.
6. Nitrate of mercury, and muriate of tin, produce the same effect, but more slowly.

From these experiments, Dr. Henry concludes, that the matter is a pe-

culiar secretion, analogous, in some properties, to the colouring matter of the blood.—*Fawdington on Melanosis*, London, 1826.

66. *Detection of Arsenic and Corrosive Sublimate, when administered as Poisons.*—In the London Medical and Physical Journal, for December, 1826, will be found a good paper on this subject, by Dr. VENABLES, from which we have prepared the following abstract:—Besides the objection heretofore urged against nitrate of silver as a test for arsenic, that it produces with phosphate of soda, a similar precipitate as with solutions of arsenic, Dr. VENABLES objects to it very properly on account of its being precipitated both by the fixed alkalies and their soluble salts. It is also an ineligible test, on account of its forming a white precipitate of chloride of silver, in case any muriates are present, thereby embarrassing the operator and obscuring his results.

Dr. VENABLES thinks, that the most simple plan of obviating these objections to the nitrate of silver, is to add it to the suspected solution, before adding an alkali, which is necessary to the efficiency of the test, as a reagent for arsenic. By proceeding thus, if no precipitate is produced, we are sure there are neither alkaline phosphates nor muriates in solution, and may now add the alkali, when the nitrate will detect the arsenic, the precipitate being disembarrassed from any admixture of phosphate or chloride of silver. If the preliminary trial produce a precipitate of phosphate or chloride of silver, or both, then the nitrate should be cautiously added, until the precipitation ceases, when the liquor must be subjected to filtration, and then tested by the nitrate in the appropriate manner for the detection of arsenic.

Dr. VENABLES approves of the proposal of Mr. HUME, to employ the ammoniuret of copper, formed by adding ammonia to any soluble salt of copper, and continuing the addition, until nearly the whole of the precipitate is re-dissolved, in order to detect arsenic. The solution, thus obtained, which Dr. V. thinks is preferably prepared from the nitrate, has a beautiful deep blue colour, and is changed to green, when added to any fluid, holding arsenic in solution, the transition of colour being extremely evident and satisfactory. Now, a peculiar advantage of this test is, that it is not affected by the alkaline phosphates or muriates.

Dr. VENABLES prefers a white card, or white plate, on which to perform the necessary trials, alleging that a drop or two of the suspected liquid is quite sufficient for the purpose. Dr. V. gives it as his opinion, that the ammoniuret of copper is the most certain test for arsenic, "as being subject to the fewest sources of fallacy."

Dr. V. has ascertained that hydriodate of potassa is a good test for corrosive sublimate, provided it be not held in solution by a spirituous solvent. Thus, if we add to a solution, containing corrosive sublimate, a dilute solution of hydriodate of potassa, there will be produced a yellowish, cloudy appearance, which soon assumes a beautiful red colour. Dr. V. adds, that this is a very delicate test.

Dr. VENABLES next considers the subject of the best method of decolourising fluids, as connected with the subject of detecting poisons, and comes to the conclusion, that animal charcoal, proposed by Mr. PHILLIPS, to effect this purpose, acts mechanically, and only as a fine filter.

After all colouring matters, which are merely suspended, have been separated by filtration through purified ivory-black, Dr. VENABLES proceeds to state, that any remaining colouring matter must be chemically dissolved, and will be either of animal or vegetable origin, except, indeed, that the sulphate of copper may be occasionally present, as when it has been prescribed as an emetic. This salt, if present, can be readily removed, and afterwards the dissolved colouring matters may be destroyed by means of

a current of chlorine. After the suspected liquid has been thus freed from colouring principles, it may have a green tinge from the presence of chlorine, which must be expelled by boiling. It is then to be assayed by the usual tests for the suspected poison.

Dr. VENABLES was not content with applying successfully this plan of decolouration, and the subsequent application of re-agents to the most heterogeneous mixture of solid and liquid aliments and medicines, that he could devise, fearing that the circumstances, under which arsenic is presented to us in the human stomach, in cases of poisoning, might not be sufficiently imitated; and, accordingly, to meet this objection, he records the following experiment:—"A *hearty* dinner, consisting of fish, soup, meat, (fresh and salt,) with a due proportion of bread, potatoes, vegetables, salad, &c. was eaten; after which, pastry, with cheese, was eaten, and a tolerable quantity of beer drank; three glasses of white, and three glasses of port wine were taken, and after dinner, a little fruit, with a glass of brandy was taken. A cup of coffee, and one of strong tea, with sugar and milk, were the last things swallowed." The stomach was then discharged by an emetic, into a basin containing five grains of arsenic. The whole was boiled with twelve fluid ounces of distilled water, and afterwards filtered through paper. It was then boiled with ivory-black and filtered through it, and afterwards submitted to the action of a current of chlorine. When, finally, the liquid became transparent and colourless, it gave the most decided and satisfactory indications of the presence of arsenic, by the use of appropriate re-agents.

Dr. VENABLES very properly adds the following remark: "It should be borne in mind, that the means of discovering this poison in the humid way should be rendered subsidiary to its metallisation. The collection of the precipitates, and their subsequent decomposition by black flux, should never be neglected."

67. *Preparation of Periodide of Mercury.*—This iodide, which has been employed by M. PAILLARD, as an external application, with great success, in syphilitic swellings of the lymphatic glands, and in venereal and scrofulous ulcerations, is prepared as follows: Add a solution of hydriodate of potassa to a solution of pernitrate of mercury. By double decomposition, there will be formed, nitrate of potassa, water, and a red precipitate, which is the iodide in question. It is applied in alcoholic or etherical solution, mixed with lard, or suspended in oil.—*Nouvelle Bibliothèque Médicale, Dec.* 1826.

VIII. MEDICAL JURISPRUDENCE.

68. *Poisoning with Fox-glove.*—Cases of this species of poisoning are very rare; and the following, from the London Morning Chronicle, quoted in the Edinburgh Journal, will therefore possess more interest.

Jacob Evans, a herbalist and quack-doctor, was tried at London for manslaughter, by administering to an apprentice lad an over dose of digitalis. For some trivial complaint, on which the quack was consulted, he advised a strong decoction of digitalis to be given as a *purgative;* and the lad took, one morning, almost six ounces of such a preparation, (strength not stated.) Very soon afterwards, he was attacked with sickness, vomiting, severe pains in the bowels, and afterwards with purging. Towards the afternoon, he became lethargic, and slept profoundly for several hours. About midnight he awoke, still affected with vomiting, and pain in the bowels. During the night, he was seized with general convulsions. A medical man,

who saw him early the next morning, found him violently convulsed, with the pupil dilated and insensible, and the pulse slow, small, and irregular. Coma soon succeeded, and death took place within twenty-two hours after the poison was swallowed.

Examination. External membranes of the brain much injected with blood. Inner coat of the stomach red in some parts; the other organs healthy.

The prisoner was found not guilty; the judges being of opinion, that, as the friends of the deceased applied for his advice, the act did not come under the statute regarding manslaughter.

69. *Propensity to Murder, Infanticide, and Suicide.—Suicide from Imitation.*—Our phrenological readers will recollect some curious instances of this horrible impulse. At a late sitting of the Paris Academy of Medicine, Dr. BARBIER, of Amiens, related the case of a woman, twenty-four years of age, who, having lost a child three months old, became the mother of a second. Ever since the trial of Madame Cornier, this woman has been possessed with a propensity to destroy this second infant. This feeling was at first feeble, but gradually augmented; and at last reached such a height, that the sight of a knife forced her to cry out for assistance, lest she should murder her own offspring. She was then admitted into the hospital at Amiens, and was under the care of Dr. BARBIER. There was nothing extraordinary discovered in her moral faculties, except this dreadful propensity; and her intellect was perfectly sane. She complained of alternate pains in the epigastrium and head; and the *former* was always present when the horrid moral disease came on. Leeches were applied alternately to the epigastrium and head; but no improvement had taken place at the date of the report.

The narration of the above case elicited several of a parallel kind from the different members of the Academy. M. MARC saw a woman who was affected with an irresistible desire to destroy her offspring. She had no discoverable bodily disease, but intestinal worms. M. BRICHETEAU stated the case of a woman, who was seized with the horrible desire to murder her mother and one of her children; and it appeared to have been excited by the view of the place where a previous atrocity had been committed—"the spot where Papavione executed his criminal act." She was secured, and by degrees the murderous propensity subsided. M. ESQUIROL had become acquainted with six instances of a similar nature, since the trial of Madame Cornier: among them was a protestant minister, who attempted the life of his favourite child. M. VILLERME related the case of a woman, who, immediately after hearing the account of an assassination, was tormented for three nights with the desire to destroy her daughter, seven years old, and had secreted a weapon for the purpose.

M. BARBIER then asked, whether any of the members had seen such cases without any physical ailment; and expressed his belief, that corporeal disorder was an indispensable preliminary condition, or, rather, predisposition. He knows a lady who is occasionally affected with monomania, *but only since her stomach has been disordered.*

M. ESQUIROL was quite of this opinion. All those he has seen affected with monomania were melancholics, and subject to disorders of the stomach.

MM. CASTEL and MARC then followed, on the powerful effect of EXAMPLE; and on the great impropriety of a practice, (very common among us in the United States,) of publishing accounts of suicide, infanticide, and homicide, at the risk of exciting the imitation of them. Of the force and justness of this remark most of the above cases furnish striking illustrations; and M. CASTEL added the following remarkable fact. A soldier, at the *Hotel des Invalides*, having hanged himself on a post, his example was followed, in a

very short time, by *twelve others;* but by removing the fatal post, this *suicidal epidemic* was put an end to.

70. *Wound of the Heart not Mortal for twenty days.*—M. Ferrus communicated to the Paris Academy, the case of a lunatic, aged thirty-four years, who stabbed himself with a stilletto in his left side. Two days afterwards, he was admitted into the Bicêtre, declaring that he had not withdrawn the instrument. The wound had cicatrized, but was very painful to the touch. The pulse was small and intermitting; the breathing laborious. Below the wound, an undulating sound was heard, like the passage of blood through a varicose aneurism. Blood-letting, general and local, was employed; but the breathing became more and more laborious every day; and on the twentieth day from the reception of the wound, he expired. On dissection, ten or twelve ounces of reddish sanies were found in the cavity of the pericardium, mixed with fibrinous clots. The pericardium itself was inflamed and thickened. The stilet was found *passing quite through the left ventricle* of the heart, and projecting some lines *into the cavity* of the right ventricle.

BILLS OF MORTALITY.

TABLE, showing the relative mortality in persons of different ages, and from different diseases, in Boston, New York, Philadelphia, Baltimore, and Charleston, for the year 1826.

Out of every hundred deaths, the number who died under one year, from one to two years old, &c. &c. are as follow, viz.

	BOSTON.	N. YORK.	PHILAD.	BALT.	CHAR.
Under 1 year	24.801	24.774	27.704	26.483	23.69
From 1 to 2	9.809	9.572	9.154	8.897	
2 to 5	5.981	7.038	6.865	7.180	7.07
5 to 10	3.588	3.620	3.228	3.694	
10 to 20	3.987	5.087	4.529	6.088	5.78
20 to 30	10.925	12.427	10.338	9.261	11.26
30 to 40	12.6	12.628	10.889	11.967	16.88
40 to 50	9.331	9.712	9.154	9.262	9.95
50 to 60	5.821	6.636	6.528	6.816	9.03
60 to 70	4.864	4.062	5.035	4.578	7.46
70 to 80	3.588	2.654	3.252	3.069	3.66
80 to 90	1.674	1.428	2.361	2.133	3.79
90 to 100	.319	.302	.771	.468	.78
100 to 110		.06	.168	.104	.65
110 to 120			.024		
Unknown	2.712				
	100.	100.	100.	100.	100.
Diseases.					
Still Born,	6.937	6.672	7.371	5.047	
Consumption,	18.	16.489	14.141	15.921	16.230
Dysentery,	3.748	3.901	1.734	2.445	.654
Dropsies,	5.661	7.038	5.83	4.37	9.292
Convulsions,		5.671	6.215	2.861	4.45

QUARTERLY LIST

OF

AMERICAN MEDICAL PUBLICATIONS.

Introductory Lecture to the Course of Anatomy and Physiology in Rutgers' Medical College, New York. Delivered November 16, 1826. By John D. Godman, Professor of Anatomy and Physiology. First edition, 1826: Second edition, 1827. H. Stevenson, Broadway, New York.

An Oration, delivered before the Philadelphia Medical Society, pursuant to appointment, on the 3d of February, 1827. By R. La Roche, M. D., Honorary Member of the Society, Member of the American Philosophical Society, &c. Published by the Society. Philadelphia, 1827.

Vide notice of this Oration, at p. 361, of this number.

A Manual of Chemistry, on the Basis of Professor Brande's: Compiled from the Works of Brande, Henry, Berzelius, Thomson, and others. Designed as a Text Book, for the use of Students and Persons attending Lectures on Chemistry. By John W. Webster, M. D., Lecturer on Chemistry in Harvard University. Boston, 1826. 8vo. pp. 603.

Vide notice, at p. 368, of this number.

An Inaugural Discourse, delivered at the opening of Rutgers' Medical College, in the city of New York, on Monday, the 6th day of November, 1826. By David Hosack, M. D., Professor of the Institutes, Practice of Physic and Clinical Medicine, &c. New York, 1826.

Observations on the Transplantation of Teeth, which tend to show the impossibility of the success of that operation. Supported by a New Theory. By James Gardette, Dentist.

The New York Medical and Physical Journal, for January.

The American Medical Recorder, for January.

The Philadelphia Journal of the Medical and Physical Sciences, for January. *In Exchange.*

The New England Journal of Medicine and Surgery, for January. *In Exchange.*

The Quebec Medical Journal. "Journal de Médecine," &c.

The Carolina Journal of Medicine and Agriculture.

Boston Medical Intelligencer.

AMERICAN EDITION OF A FOREIGN WORK.

An Essay on Morbid Sensibility of the Stomach and Bowels, as the proximate cause, or characteristic condition, of Indigestion, Nervous Debility, Mental Despondency, Hypochondriasis, &c. &c. To which are prefixed, Observations on the Diseases and Regimen of Invalids on their return from hot and unhealthy climates. By James Johnson, M. D. of the Royal College of Physicians, &c. Philadelphia, 1827. 12mo. pp. 154.

PROPOSED AMERICAN PUBLICATION.

Wells & Lilly, of Boston, propose to publish, by subscription,

A Series of Engravings, illustrative of the different Stages of the Small Pox and Varioloid Diseases; to which will be added, an Engraving, representing the Vaccine and Chicken Pox Eruptions during their course. By J. D. Fisher, M. D.

"The paintings, from which eleven of these plates are to be engraved, and of which they are to be the exact copies, were made in Paris, in 1825-6, at the time when the diseases which they are to represent, prevailed epidemically in that city. They were executed by a French artist for, and under the immediate direction and personal observation of, the author of the proposed publication, and were all commenced and finished at the bedside of the patients from whom they were taken. The engravings will be printed upon the best drawing paper, and will be coloured by the author's own hand, or under his immediate inspection."

We have had the pleasure of examining the original drawings of Dr. Fisher, for the proposed engravings. They are very excellent representations, and when suitably engraved and coloured, will, no doubt, be exceedingly useful to the rising generation of physicians in our country—who, fortunately, have had very few opportunities of noticing this loathsome disease. We regret, that *any* cases, even in our large cities, with their mixed population, should be presented to the physician,—and although this may not be wholly avoided by human prudence, it nevertheless becomes the serious and conscientious duty of the civil, as well as of the medical, guardians of the public health, to inquire how far the guilt is ours, and whether the inestimable blessing of the vaccine inoculation has been duly appreciated and improved.

We are happy to learn, that the patronage already extended to the proposed work of Dr. Fisher, is sufficient to insure its publication—which may, therefore, be expected in October or November next.

Erratum in No. 5.

Page 15—for "Those I have found," &c. read, Those that have been found, &c.

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